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99th Year of Publication

JANUARY 1968 / Vol. 88, No. 1 / Pages 1 - 34

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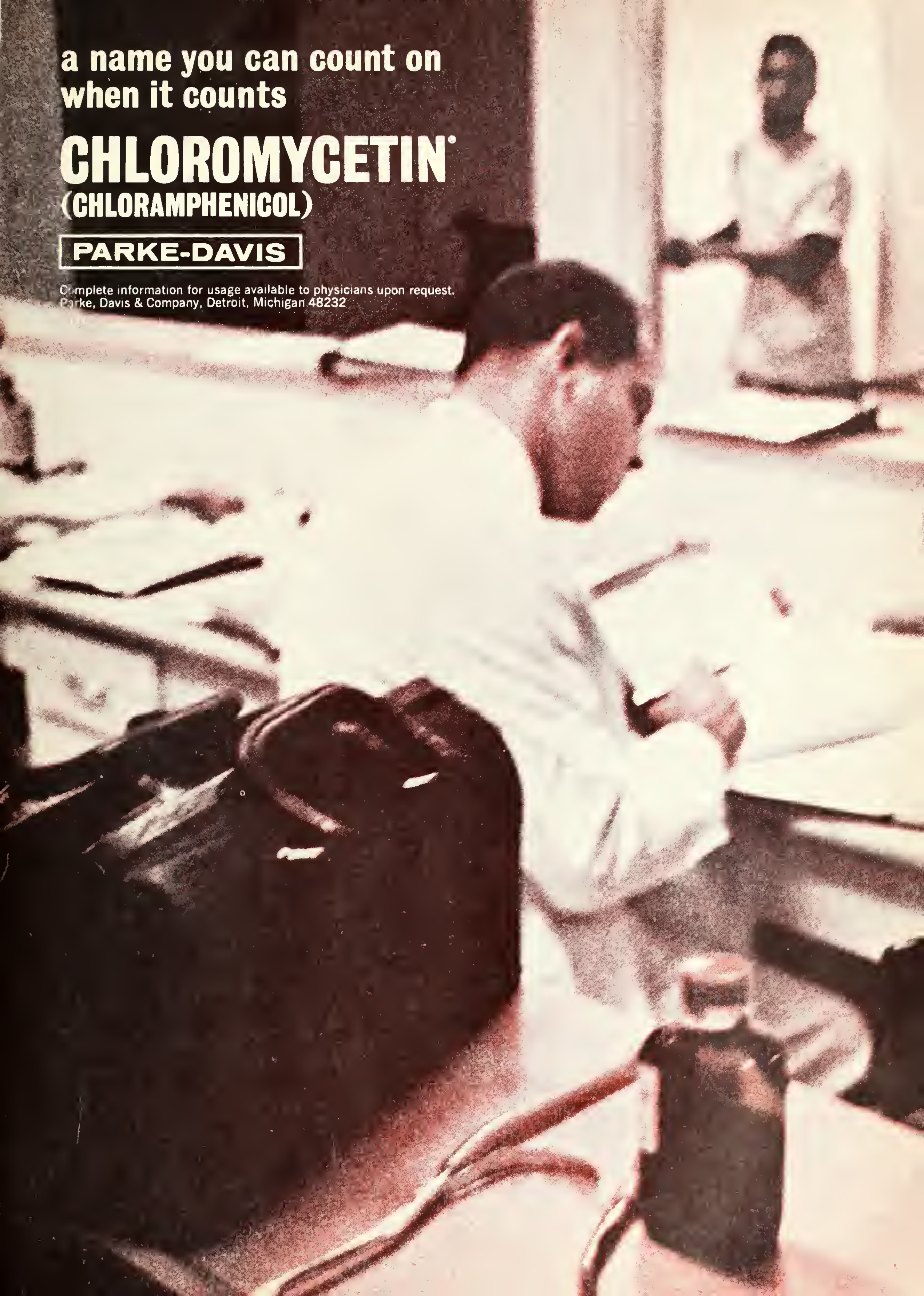
ADVERTISING REPRESENTATIVES: *New York 10017* (330 Madison Ave., phone 212 682-8717) William J. Assman, Jr., Lester Shapiro, Bern Rogers, Ron Ziegler, Bernard A. Smiler, George Janco; *Chicago 60606* (20 North Wacker Dr., phone 312 236-4617) Glen Schlueter, Jay H. Herz, Hugh Gibson; *San Francisco 94104* (57 Post St., phone 415 392-6794); *Los Angeles 90057* (1901 West Eighth St., phone 213 438-8530).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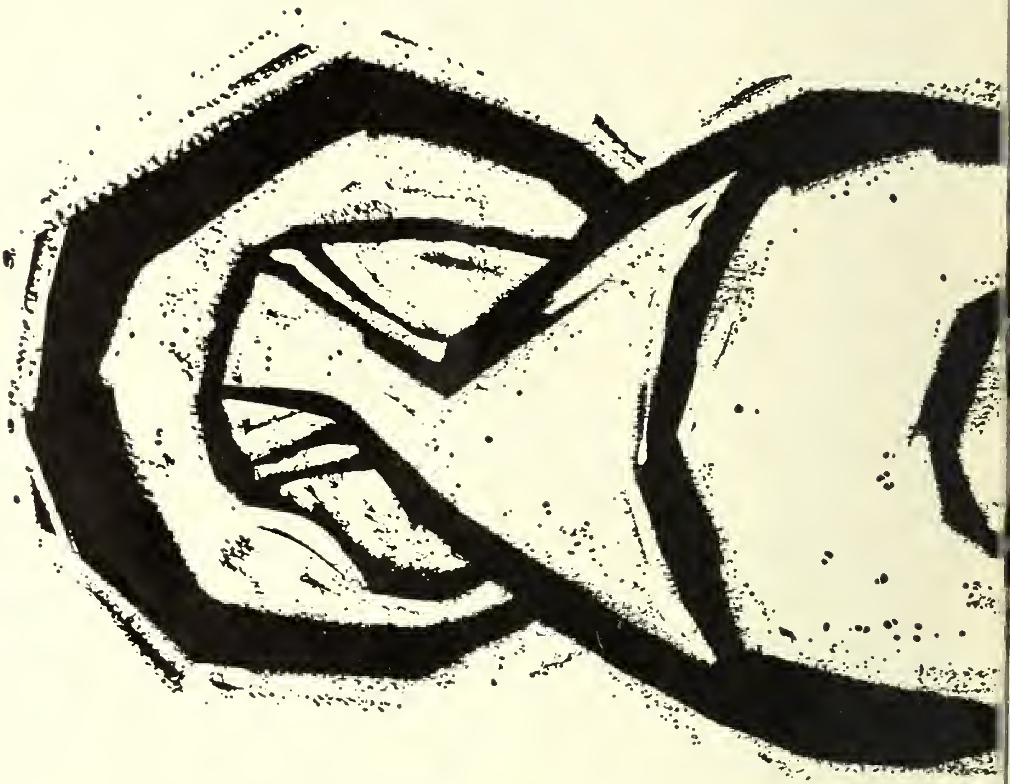

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**Precautions:** Administer with caution in severe ulcerative disease because of predisposition to perforation of bowel wall. In advanced chronic disease with loss of mucosa and fibrosis, steroids might hasten deterioration. In severe cases, it is hazardous to delay surgery more than a few days awaiting response to medical treatment. Because of possible adrenal insufficiency, therapy must be withdrawn gradually. If patient is subjected to unusual stress while on steroid therapy or within a year thereafter, adequate supportive measures and increased or reinstated steroids are indicated. For surgery, these measures must be continued throughout pre- and postoperative recovery periods, bearing in mind possible deleterious effect on fresh intestinal anastomoses. Steroids might impair surgical prognosis by increasing hazard of infection. If infection is suspected, administer appropriate antibiotic in large doses. Observe all precautions common to other steroid therapy. Watch for growth suppression in children during long-term use. Keep patients under close observation. Discontinue treatment and institute appropriate measures, if severe reactions occur. If necessary to use Cortenema in pregnancy, examine infants closely for hypoadrenalism; if signs are seen, institute appropriate measures, including steroids.

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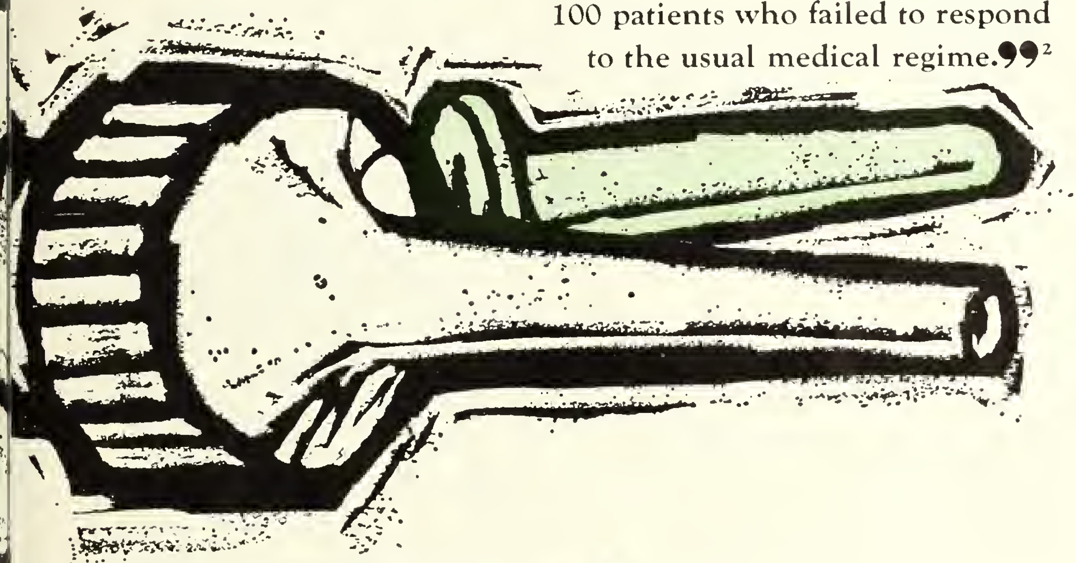

**Dosage and Administration:** Use of Cortenema is predicated upon concomitant use of modern supportive measures, such as blood replacement, rational dietary control, antispasmodics and sedatives, antibacterial therapy, and systemic steroids.

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Instruct patient to lie on left side during instillation. Shake bottle vigorously to resuspend hydrocortisone. Expose lubricated tip by removal of sheath. *Carefully* insert tip into rectum in direction of sacrum. Slowly express contents by compressing container. After instillation, patient should remain on left side at least 30 minutes.

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[1] Sherman, L. F.: The treatment of ulcerative colitis with hydrocortisone alcohol retention enemas. A topical and systemic anti-inflammatory agent, *Minn. Med.* 48:605, May 1965.

[2] Sherman, L. F., Tenner, R. J. and Schottler, J. L.: Treatment of ulcerative colitis with hydrocortisone alcohol retention enemas: A topical and systemic anti-inflammatory agent. Part II, *Dis. Colon & Rectum* 10:43, January-February 1967.

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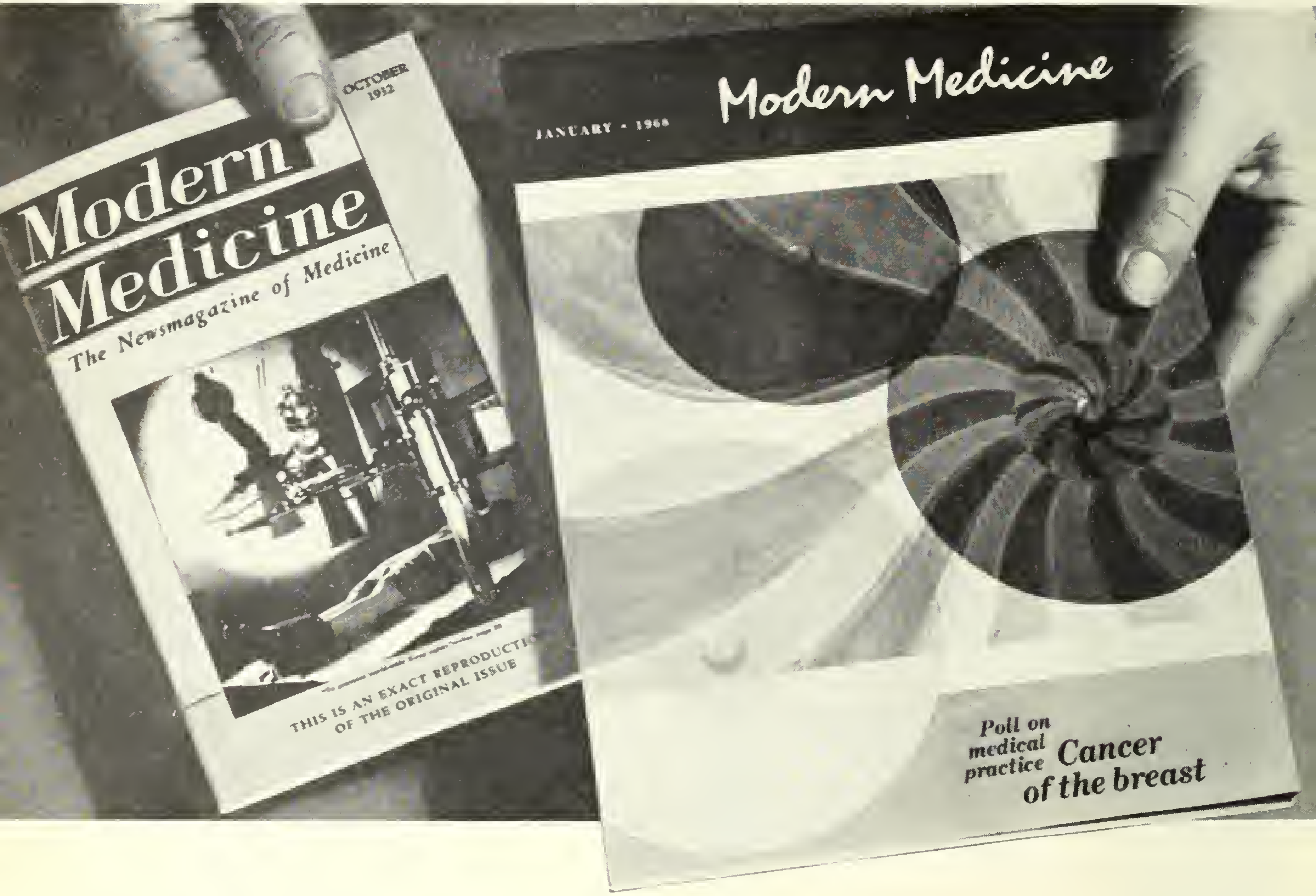

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this issue: the cold in pregnancy...

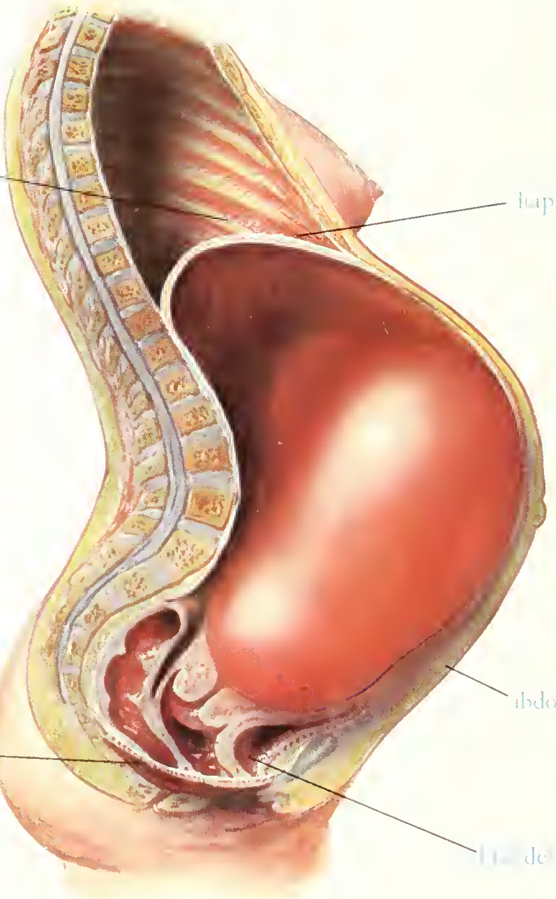
# the cold in pregnancy

Frederick W. Goodrich, Jr., M.D.
Senior Obstetrician and Gynecologist, Lawrence and Memorial Hospital, New London, Connecticut

Since pregnancy and the common cold are both ubiquitous, it is not surprising that they often occur at the same time in the same patient. Incidence figures are hard to come by, but the chances are very good that any given pregnant woman will have a cold at some time during the nine months of her gestation. When she does, she will tell you that it is the worst cold she ever had. It seems to last longer and the symptoms are more distressing than they are in the non-pregnant.

For purposes of this discussion, the common cold is considered to be the well-known symptom complex which includes sore throat, stuffy nose, and a cough. Febrile states or extension of the disease process into the lower respiratory tree are not part of the common cold and will not be included in this discussion.

The clinical picture of a cold in pregnancy can be confused by a long-known physiological phenome-



non. Kiesselbach's area in the nose (on the anterior part of the nasal septum above the intermaxillary bone) becomes engorged, apparently due to hyperemia induced by the increased estrogen level which accompanies pregnancy. The amount of congestion can vary in degree from woman to woman. Some have very little congestion, others will have occasional nosebleeds from this area, still others will have symptomatic congestion to the degree that they will complain of having a "chronic" or constant cold.

less well recognized is the occurrence of this type of hyperemia in any part of the nasopharyngeal mucosa, again in varying degree. Such swelling often produces a postnasal drip which, the patient will state, is present only when she is pregnant. Patients who do not have symptomatic congestion ordinarily, will find that when they do get a cold, the symptoms last much longer than those of a cold usually do. Occasionally, this hyperemia is responsible for closure of the medial end of the Eustachian tube; such patients will complain of "plugging" of the ears. Inspection of the ear drum will show a depression which confirms the presence of Eustachian closure rather than wax in the canal which is the patient's diagnosis. Symptoms related to this physiological congestion are more apt to occur in heavier smokers or those who have a history of allergic rhinitis, just as are the symptoms of the common cold. And when the cold does occur in pregnancy, the symptoms are worse because of the underlying congestion.

The pregnant woman with a cold is miserable for other reasons, dependent somewhat on her parity and the length of her gestation. As parity increases, so also does the relaxation of the abdominal and perineal musculature. The uterus, lying against a slack abdominal wall, and bearing down on relaxed perineal muscles, acts like a piston when the patient coughs, sneezes, or even blows her nose, pushing down on the bladder. Stress incontinence during colds is almost the rule.

as the length of gestation increases, so does the size of the uterus. As it grows, it pushes the abdominal contents above it and elevates the diaphragm. This results eventually in a lateral displacement of the lower rib cage, often to a point at which the patient will complain of soreness in this area. If such a

*(Concluded on following page)*

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patient has a cold, the coughing and sneezing will exaggerate this soreness. The diaphragmatic restriction caused by the enlarging uterus also makes breathing more difficult, particularly when the patient lies down. A cold compounds this difficulty.

Treating a cold in pregnancy requires two additional considerations. The patient should be told that the symptoms may last longer lest she become discouraged, and she should be reassured that the treatment will not damage the fetus. Although there are still some women who seem blissfully ignorant regarding matters of health (and these need to be cautioned not to take medication recommended by friends), most of our maternity patients are aware of the thalidomide tragedy. These women need constant reassurance that the symptoms of a cold can be treated, and that the medication is safe. Fortunately, many of the drugs which are of benefit have been in use long enough and widely enough so that such a statement can be offered. Occasionally one encounters a patient who is so anxious to avoid medication that she is extremely reluctant to take anything at all. Since cold is self-limited, it seems reasonable enough to give such a patient the choice and not to force drugs on her if she is obviously afraid of taking them.

The most distressing symptom of the common cold is the nasal congestion. This can be mitigated by the use of a decongestant which will help reduce the postnasal drip and the coughing caused by it. The kind of a cough which is described as a "tickling" in the throat and which is apt to occur when the patient goes to bed is usually due to nasopharyngeal congestion rather than inflammation in the lower respiratory tract.

There are many cough mixtures available. Most contain an antihistamine, a decongestant, and a cough "suppressant." Should cough suppression be desirable, it is important to remember not to use both a decongestant tablet and such a cough mixture as the patient would be getting a double dose of the decongestant. With some patients, the placebo effect of a cough syrup may be important and a liquid preparation might be substituted for an oral tablet.

For a sore throat, candy drops or lozenges at frequent intervals are soothing. It is not only unnecessary but unwise to use antibiotic lozenges or drops. The use of antibiotics in an uncomplicated cold is contraindicated and should be scrupulously avoided.

In summary, a cold in pregnancy is more severe and longer lasting. The treatment of the symptoms with local and systemic decongestants will make the patient more comfortable.

Apparently the cold is so common in pregnancy that it has received very little attention in the literature. References are almost non-existent and the few which are available add little to the common knowledge, are out-dated, or are not helpful. Thus the usual bibliography is not appended.

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# Systemic Manifestations of Ulcerative Colitis

D. P. DANIOLOS, M.D.

Bismarck

Ulcerative colitis is thought by many to be a generalized constitutional disturbance since the clinical manifestations are confined not only to the bowel but may involve a wide range of organ systems of the body.

The occurrence of colonic manifestations is well known. The most common of them are pseudopolyps (and, rarely, true adenomatous polyps); stricture of the bowel or of the rectum and perirectal lesions (abscesses and fistulas); massive hemorrhage; perforation of the colon; carcinoma of the colon (Bargen and associates[1] mention that the incidence of cancer of the colon in people with ulcerative colitis is 30 times more frequent than in the general population of the same age); fistulas, or communications between different parts of the colon and other organs; and toxic megacolon.

Although the colonic manifestations and complications of ulcerative colitis are well known to all of us, I believe we seldom think of the systemic manifestations of the disease. Admittedly they occur less frequently, yet the clinician should be familiar with them and on the alert for their occurrence as some of them indicate severe abnormalities. Furthermore, the lack of knowledge of certain systemic manifestations of ulcerative colitis can mislead us to an entirely erroneous diagnosis, for the systemic signs and symptoms may be so remote from the colon as to suggest no possible connection with colitis.

Systemic manifestations of ulcerative colitis may actually involve a wide variety of organ systems of the body. The most common of them are acute thrombophlebitis occurring in approximately 9% of cases and arterial thrombosis and embolic phenomenon in general. Renal lesions quite frequently are found in autopsies of ulcerative colitis patients in the form of glomerulonephritis, tubular degeneration and nephrosis, pyelonephritis, and pyelocystitis. Interstitial pancreatitis of questionable clinical significance may be indicative. Infantilism and retardation of sexual development (when the disease begins in childhood) have been noted. Myocardial changes and, less commonly, acute endocarditis (mostly in right-sided colitis) and pericarditis have also been reported. Other reported manifestations are: ocular changes in 1 to 2% occurring as iritis, uveitis, and episcleritis; skin lesions varying, according to several studies, between 9 and 13% of the cases; arthritis occurring in approximately 17% of cases; liver disease; and emotional disturbances and personality changes.

It is obvious from the above that the systemic symptoms of ulcerative colitis are not as rare as one thought. I would like to give a brief description of the most common ones, namely skin lesions, arthritis, liver disease, and emotional disturbances and personality changes.

The most common skin lesions are aphthous stomatitis and pyoderma gangrenosum, which has been a very difficult complication. The latter has been found less frequently in recent years since the improvement of treatment of ulcerative colitis and the availability of antibiotics. Furunculosis and abscesses in injection sites have been

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frequently seen in recent years. Erythema multiforme, erythema nodosum, and urticaria and skin manifestations of avitaminosis have been reported in several cases.

Arthritis is possibly the most common complication of ulcerative colitis. In a study of 555 cases of ulcerative colitis published by Fernandez-Herlihy,[2] 5% of the arthritic manifestation are classified as rheumatoid spondylitis, 3.2% as rheumatoid arthritis, 4.2% as arthralgias, 2.8% as erythema nodosum with some articular manifestations, and 1.8% as acute toxic arthritis.

In a study by Roth,[5] 10% of cases with severe ulcerative colitis had shown some sort of liver disease. In a recent study of 30 cases of prolonged hepatic disease in patients with ulcerative colitis, Stauffer and associates[6] found that triaditis with cholestasis was the most prominent hepatic lesion as indicated by clinical, laboratory, and pathological data. Serum alkaline phosphatase was increased in all cases and exceeded 100 King-Armstrong units in half the cases. The authors emphasized that increased alkalin phosphatase might be one of the earliest clues to hepatic disease in patients with ulcerative colitis. There was an increase in the plasma lipids of 9 of these patients. In 25 patients increase of plasma cholesterol was observed in 11. An increase of the transaminase in 24 of the 30 patients was also observed. An LE phenomenon was demonstrated in 3 cases suggesting that an autoimmune mechanism might be involved. Another point of interest noted in their study was that after the hepatic disease manifested itself, the colitis became milder or quiescent. In 4 cases in which colectomy was performed, improvement in the hepatic status was noted. This suggests that removal of the colon in the presence of the colitis-liver syndrome merits consideration. Improvement in some patients after the use of steroids suggested trial of their use for the intrahepatic lesion.

A study of particular interest was published in July 1965 by Mistilis and associates[3] in which 24 patients with ulcerative colitis and liver disease were diagnosed by aspiration liver biopsy and studied and followed up for periods of up to thirty-two years. Pericholangitis was found to be the most common hepatic complication of ulcerative colitis in this study. Marked elevation of serum alkalin phosphatase, hypercholesterolemia, and bromsulphalein retention was common to all patients. Transaminase elevation was found in 7 of the 9 patients tested. In both these latter studies the liver disease usually appeared well after the ulcerative colitis.

An interesting and controversial subject is the emotional disturbances and personality changes noted in cases of ulcerative colitis. Palmer[4] mentions that "personality and emotional characteristics of the ulcerative colitis patient are almost always recognizable when the patient is first interviewed. These are patients with complex neuroses. They are not overt psychoneurotics of the complaining variety and the neuroses in themselves seldom create symptomatic problems. Hostility is a major symptom, but it is usually well submerged under an exterior of submissiveness. Similarly tension and anxiety may be difficult to detect. Most overt are sensitivity, chronic depression, passivity, emotional immaturity, dependency, indecision and consciousness carried to a state of perfectionism. There are rigid attitudes towards morality and standards of behavior. The sense of humor is defective, largely perhaps because of obsessive worry. Similarly clear-cut expressions of anger are uncommon. Although a high level of intelligence is usually found, failure of accomplishment is the patient's characteristic recurrent problem. In a level-of-aspiration test, such as estimating the next score after a pin-ball game, he invariably predicts a lower score than he got the first time, as opposed to the duodenal ulcer patient who predicts a higher score, or of normal persons who usually predict a score close to that of the first game. It has been the experience of most observers that duodenal ulcer and ulcerative colitis rarely coexist. A point of importance in understanding the difference in the personality patterns and emotional responses usually noted in the two illnesses." In our studies we have found only 1 patient with ulcerative colitis and coexisting duodenal ulcer.

Palmer very colorfully also notes "one cannot care for many ulcerative colitis patients without becoming impressed with the importance of the mother to the patient and to his illness. Sometimes it is a mother-figure, as wife or older sister, but usually it is the mother herself even in the case of the elderly patient. An extreme degree of dependency is forced upon the ulcerative colitis patient and with it there develops restricted relationships with other persons. To both patient and mother the relationship appears to be the most wholesome there could be and both are likely to take pride in it. The mother will believe that she is exhibiting the best maternal care, and the patient will frequently claim that he has the best 'mom' in the world. Any situation that might present to the patient a threat of permanent interruption in this key relationship is likely to be taken hard by his soma. If the mother, or the person who has assumed the mother-figure, should die the patient who has gained no insight into the significance of the relationship may have a severe relapse. On the other hand, for the patient who has been benefitted from therapy that has included psychotherapy death of the mother is often accompanied by dramatic remission of the colitis. Thus, a relapse which might be occasioned when the mother visits a married ulcerative colitis patient is likely to subside when she leaves. Similarly among troops on an overseas assignment, ulcerative colitis is found to be a rare problem." Palmer further states that "in a rather large proportion of young men, exacerbations are particularly likely to be witnessed just before, or during, the Christmas period. This appears to be tied in with world-wide customs of returning home for the holidays. This is an interesting phenomenon and one can observe both the trauma of home and the need of home support mechanism. These exacerbations in some patients seem associated with the feeling of obligation to return home when the desire is quite the opposite, and in others the problem seems to be a desperate need to get home but some duty makes this impossible."

Ulcerative colitis is a relatively uncommon disease. In reviewing the records of the Quain & Ramstad Clinic during the thirty-year period from 1936 to 1966, I was able to find only 92 cases. Yet the persistence and variability of its symptoms are such as to consume a considerable portion of the physician's time, as is evident from the clinic's review. Cases included in this study were confirmed clinically, radiologically, and proctoscopically. In some instances histologic confirmation was also available.

Fifty-three of the patients were female, 39 were male. The age range was between 9 and 74 years at the time of onset of the symptoms. Emotional disturbances ranging from plain anxiety to true psychosis were recorded in 26 patients making this the most common associated condition. Arthritis was listed as a secondary diagnosis in 20 patients. Rectal complications including strictures, fistulas, abscesses, polyps, and rectovaginal fistulas were recorded in 18 cases. Skin lesions were found in 16. One case of erythema nodosum, 1 of hemorrhagic purpura, 1 of psoriasis, and 1 of granuloma of the axilla was observed. The rest of the skin manifestations were nonspecific dermatitis.

Some form of liver disease was listed in 10 patients. Because of the recent studies in connection with the elevated alkalin phosphatase in patients demonstrating liver disease as a complication of ulcerative colitis, we were interested in the patients in which alkalin phosphatase was performed. Unfortunately there were only 11. Of those 5 showing an elevated alkalin phosphatase, all proved to have some form of liver disease. In 5 others the alkalin phosphatase was normal and there was no indication of liver disease. In 1 instance the alkalin phosphatase was normal and yet the patient did have a palpable liver and an abnormally elevated cephalin flocculation, indicating possibly that the liver disease was not related to the colitis. Transaminase was done in only 8 cases and in only 2 instances was it found to be elevated; both patients proved to have liver disease. In 1 other patient with proven liver disease the transaminase was reported as normal.

Surgical exploration was carried out in 13 patients. Of those, 10 had a total colectomy and ileostomy, 1 had a hemicolectomy of the right colon and part of the ileum with an end-to-end anastomosis, 1 had a left hemicolectomy, and 1 had an ileostomy only. The results in all the patients that had a total colectomy and ileostomy were, in my estimation, very satisfactory. The patient who had a partial colectomy of the descending and sigmoid colon did only fair. The patient who had only ileostomy had a rather poor outcome. The one who had the right hemicolectomy with an end-to-end anastomosis and partial removal of the ulcerated ileum did relatively well for the first several years but had a relapse of the ulcerative colitis later and had to be reoperated upon. At this time a total colectomy and ileostomy was done.

Of the total of 92 patients, 10 died during the interval of the study—6 of complications of ulcerative colitis, 1 of carcinoma of the lung, 1 of malignant lymphoma, 1 of metastatic carcinoma of the liver, and 1 of adenocarcinoma of the descending colon. In 1 who died of ulcerative colitis, autopsy revealed a perforation of the colon with generalized peritonitis. In another one of the same group, pyelonephritis and fatty metamorphosis of the liver were also found at autopsy. In only 1 instance histologic examination of a single colon polyp removed revealed a focus of grade 1 adenocarcinoma.

I think certain conclusions can be drawn from this study. Ulcerative colitis is a disease with a wide range of manifestations, many of them extraintestinal. As T. P. Almy,[7] in an interview, indicated these systemic manifestations should best be called associated conditions rather than complications and that they, along with the colonic lesions, may be considered as part of a generalized disease process. It may be well to say that the term ulcerative colitis actually is an erroneous term, indicating a disease entity of the bowel only. Actually we are dealing with a generalized type of illness and in the future this illness may well be included in an entirely different group of diseases than where it is now classified (connective tissue disorders or autoimmune reaction mechanisms, and so forth).

I would like to emphasize that we should be very much on the alert for extra colonic complications when we treat patients with ulcerative colitis. I was also impressed with the very excellent results that our surgeons have accomplished in treating patients with ulcerative colitis. Although I don't believe one should rush to advise surgical procedures on any patient with ulcerative colitis, in many instances this is a wise choice. The satisfactory results we have produced with colectomies and ileostomies are definitely a good indication that surgery still has its place in treating ulcerative colitis. The records of these patients showed them to have come to the office or to the hospital very often over months and years with their distressing symptoms. The change in their well-being, in their emotional status, in their family life, and in their productivity was so sharply evident after either the colectomy or the ileostomy procedure that I am sure they wonder why this was not done earlier. From what this limited study indicated, procedures other than colectomy or ileostomy have very little to offer in surgical treatment of ulcerative colitis.

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Presented at the Quain & Ramstad Clinic Fall Clinical Conference, October 29, 1966.

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# Carcinoma of the Prostate: A Review

## Part II. Treatment According to Clinical Stage of the Cancer

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THE AUTHOR, as well as many other urologists, has adapted the method of clinical staging of prostatic cancer promulgated by the Veterans Administration Prostatic Cancer Group (Fig. 11).[54] After a positive tissue diagnosis has been made, the total and prostatic serum acid phosphatase levels determined, and the skeletal survey done, the patient is placed into one of four clinical stages.

Stage I is carcinoma in situ or microscopic cancer. The prostate feels benign on rectal examination, but a small focus of carcinoma is discovered incidentally during routine examination of the surgical specimen removed for prostatism. Stage II is clinically detectable carcinoma. A small nodule or localized area of induration confined to the prostate is palpated on rectal examination. Stage III is carcinoma which has extended beyond the confines of the prostatic capsule, but there is no evidence of distant metastases. In Stages I, II, and III, the serum acid phosphatase is normal; that is, the total is 4 King-Armstrong units or less and the prostatic or tartrate-inhibited fraction is 1 King-Armstrong unit or less. Also, there are no osteoblastic or osteolytic lesions noted on the skeletal survey. Stage IV is metastatic carcinoma of the prostate. Metastases are considered to be present if a properly collected serum acid phosphatase is elevated or there is roentgenographic evidence of skeletal metastases or both. In a study of over 2,000 patients with prostatic carcinoma during the past seven years, Mellinger[55] noted that 5% were assigned to Stage I, 8% to Stage II, 48% to Stage III, and 39% to Stage IV (Table 1). Therefore, only 13% of the patients when first seen had prostatic cancer in a potentially curable stage.

Classification is important because the treatment and prognosis of the patient with prostatic carcinoma depend primarily upon the clinical stage of the disease when first discovered. Other factors which may influence treatment are the age and general health of the patient and the histological grade of the tumor. Treatment will be considered in accordance with the clinical stage of the cancer.

### STAGE I CARCINOMA

Stage I carcinoma of the prostate is latent or microscopic cancer. There is no biochemical or roentgenographic evidence of metastases, and the prostate feels normal on rectal examination. The diagnosis during life is made by finding a small focus of adenocarcinoma in an enucleated adenoma or in one or two pieces of prostate removed by transurethral resection. The different treatments advocated for Stage I prostatic carcinoma include hormonal therapy (estrogens or bilateral orchiectomy or both), radical prostatectomy with or without supplementary estrogens, and no treatment at all.

Melicow[12] feels that latent prostatic carcinoma in the elderly patient tends to have a low lethal potentiality, whereas in the younger patient this type of cancer is highly invasive locally, and early metastatic spread is likely. Therefore, at the Columbia-Presbyterian Medical Center, latent carcinoma is treated either by estrogens and/or orchiectomy or by radical prostatectomy, depending upon the age and physical condition of the patient and the histological grade of the tumor. Bailar and associates,[56] on the other hand, believe that a prostatic carcinoma of any given grade is no more malignant in a young person

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TABLE 1

CLINICAL STAGING OF 2,057 PATIENTS WITH PROSTATIC CANCER FROM THE VETERANS ADMINISTRATION COOPERATIVE UROLOGICAL RESEARCH GROUP

| *Stage* | *Number of patients* | *Percent* |
|---|---|---|
| I | 113 | 5 |
| II | 161 | 8 |
| III | 983 | 48 |
| IV | 800 | 39 |

than it is in an elderly patient. A patient with a higher grade prostatic malignancy does tend to have a poorer prognosis.

The Veterans Administration Cooperative Urological Research Group[55] during the past seven years has performed radical prostatectomy—total prostatoseminal vesiculectomy—on 113 patients with Stage I and on 161 patients with Stage II carcinoma of the prostate. Some of these patients received supplementary estrogens, while others received only a placebo. Only 6 of the 274 Stages I and II patients have died of carcinoma of the prostate. There was only one death from prostatic cancer in the entire Stage I group, and it was thought that this patient actually should have been placed in a higher stage at the beginning. Stages I and II patients receiving supplementary estrogens actually showed poorer survival than those who had radical prostatectomy alone (Fig. 12). Those patients receiving supplementary estrogens had a high incidence of cardiovascular deaths. The patients selected for radical prostatectomy were usually less than 70 years of age and were generally in good physical condition prior to their surgery and estrogen therapy. These data have been analyzed and found to be statistically significant.

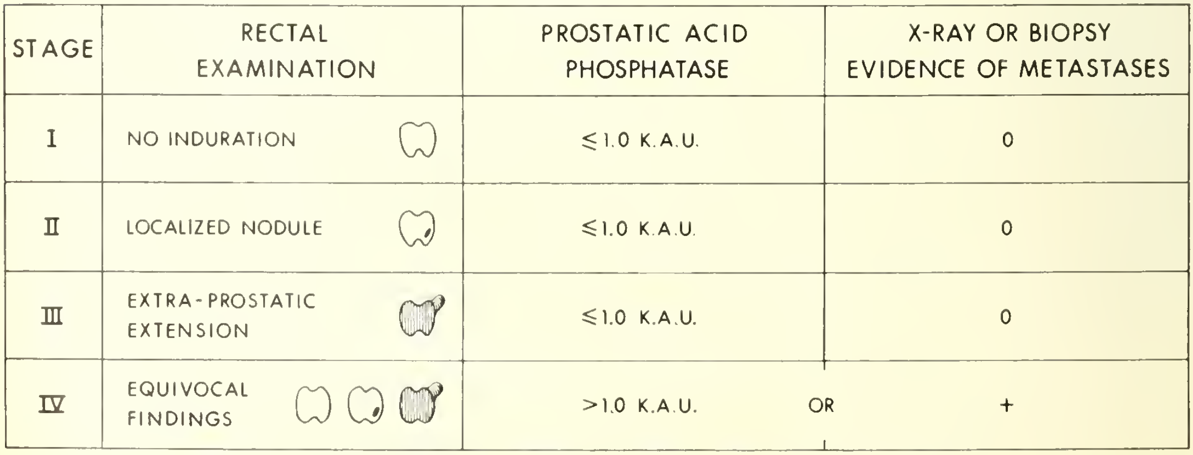
The length of time it takes for a latent or microscopic carcinoma of the prostate to become clinically evident can only be surmised, but there is good evidence that in most patients it takes a long time. Montgomery and associates[57] studied 35 patients with latent prostatic carcinoma over a minimum period of eight years. The average age at the time of diagnosis was 72 years, and all patients were untreated. At the time of publication in 1961, 11 of the 35 patients were still alive, but not one patient had died of prostatic cancer. These authors feel that radical prostatectomy is rarely indicated for Stage I cancer of the prostate.

While Stage I prostatic carcinoma is potentially curable by total prostatoseminal vesiculectomy, the operation does result in some degree of permanent urinary incontinence in approximately 10% of patients.[58] If it is true that men with latent carcinoma rarely die of prostatic cancer, then radical prostatectomy is not indicated for Stage I patients. Hormonal therapy has been set aside for older patients and those with poor cardiopulmonary reserve. If the Veterans Administration study is correct, the giving of estrogens to these patients may shorten their survival by increasing the incidence of cardiovascular complications. Probably the best treatment for Stage I carcinoma of the prostate is no treatment at all.

### STAGE II CARCINOMA

Stage II carcinoma is characterized by a small nodule or area of induration confined to the prostate and by no biochemical or roentgenographic evidence of metastatic spread. The diagnosis is made preferably by transperineal needle biopsy or by open perineal biopsy.

As previously mentioned, opinion is divided as to the malignant potentiality of microscopic or latent prostatic cancer. Most investigators,



| STAGE | RECTAL EXAMINATION | PROSTATIC ACID PHOSPHATASE | X-RAY OR BIOPSY EVIDENCE OF METASTASES |
|---|---|---|---|
| I | NO INDURATION | ≤1.0 K.A.U. | 0 |
| II | LOCALIZED NODULE | ≤1.0 K.A.U. | 0 |
| III | EXTRA-PROSTATIC EXTENSION | ≤1.0 K.A.U. | 0 |
| IV | EQUIVOCAL FINDINGS | >1.0 K.A.U. OR | + |

Fig. 11. Method of clinical staging of patients with prostatic carcinoma

however, are of the opinion that the palpable nodule represents a more advanced stage of the disease and is much more likely to undergo rapid growth and metastasize than is Stage I carcinoma. The clinician is more prone to underestimate the actual extent of the cancerous nodule than he is to overestimate it.[59] Therefore, the treatment of choice for Stage II carcinoma of the prostate is radical prostatectomy, provided the patient is in good general health and otherwise has a life expectancy of at least ten additional years.

Operable prostatic cancer is not found very often. In the Veterans Administration series of 2,057 patients, Stage II carcinoma comprised only 8% of all cases of prostatic cancer.[55] Scott and Toole[60] estimate a 5% incidence of operability throughout the United States.

There are two main approaches to the prostate for performing a radical prostatectomy. These are the perineal and retropubic approaches. Hugh Young,[61] in 1905, was the first to advocate the perineal approach for radical prostatectomy in the treatment of early carcinoma of the prostate. Forty years later, Terrence Millin[62] introduced the retropubic approach primarily for the treatment of benign nodular hyperplasia of the prostate. Since 1945, Chute[63] and other urologists have advocated the radical retropubic prostatectomy for prostatic carcinoma. There are advantages and disadvantages to both approaches. The advantages of the retropubic approach include the opportunity to inspect the iliac lymph nodes and the ease in which the seminal vesicles and vasa deferentia can be freed. The disadvantages of the retropubic approach include the difficulty in exposing the posterior capsule of the prostate for biopsy and in performing the vesicourethral anastomosis.

The operation of radical prostatectomy is not nearly as radical as the name implies. In the perineal approach as advocated by Hugh Young, the patient is placed on the operating table in an extreme lithotomy position, and an inverted U-shaped incision is made approximately 1 in. anterior to the anus. The ischiorectal fossae are then developed on both sides of the central perineal tendon and the latter is divided. The levator ani muscles are retracted laterally, and after developing a cleavage plane between the two layers of Denonvilliers' fascia, the prostate and seminal vesicles are easily freed from the rectum. The membranous urethra is completely transected at its junction with the apex of the prostate, following which the puboprostatic ligaments are divided, thereby freeing the gland from the posterior surface of the symphysis pubis. Next, the bladder neck is completely transected, following which a cleavage plane between the trigone of the bladder and the seminal vesicles is developed. The vasa deferentia are separately isolated, ligated, and divided. The seminal vesicles are then freed from the surrounding tissues, and the vascular pedicles to the prostate are isolated, ligated, and divided. Removed en bloc are the entire prostate, the seminal vesicles, the distal portions of the vasa deferentia, and a narrow cuff of the bladder neck. The bladder neck is then sutured to the stump of the membranous urethra, and a catheter passed through the urethra into the bladder is left indwelling for a period of ten days to two weeks. The wound edges are approximated around a rubber tissue drain.

One of the main advantages of the perineal approach is the ease in which the posterior capsule of the prostate can be exposed for biopsy. The small nodule or area of induration is biopsied and frozen sections are made. If carcinoma is seen on frozen section, a total prostatoseminal vesiculectomy is performed immediately. Occasionally, the frozen sections are reported as benign, but when the paraffin sections are examined, carcinoma is found. When this happens, either the perineal wound can be reopened a few days later or the extirpative surgery can be completed through a retropubic approach.

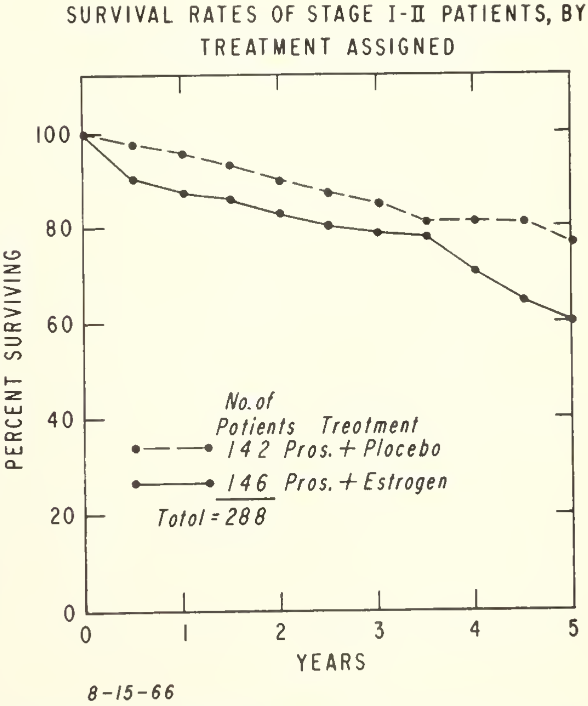


Fig. 12. Survival rates of Stages I and II prostatic cancer patients, by treatment assigned

Most patients are impotent following radical prostatectomy performed through any approach. As previously mentioned, total prostatoseminal vesiculectomy results in some degree of urinary incontinence in approximately 10% of cases.[58]

In judging the results of radical prostatectomy for prostatic cancer, ten- and fifteen-year survival rates are more significant than five-year survival figures. The patients included in the following three series are those cases in which there was microscopic confirmation that the cancer was truly confined to the prostate. Jewett[64] reported a ten-year survival rate of 52.5% following radical perineal prostatectomy, which is almost identical to the expected survival rate of 53% for men of the same age group without prostatic cancer. Jewett[65] in 1963 reported an extended study of 40 patients with Stage II carcinoma followed fifteen years or longer after radical perineal prostatectomy. The survival rate at fifteen years was 30%. Twenty-two patients with comparable prostatic tumors who received endocrine therapy only were followed fifteen years or longer. The survival rate of this group of patients was 32%, but only 9% were presumed to be free of cancer. Turner and Belt[66] reported a ten-year survival rate of 43% following radical perineal prostatectomy.

### STAGE III CARCINOMA

In Stage III carcinoma of the prostate, the cancer has spread locally beyond the confines of the prostate but has not yet metastasized. The serum acid phosphatase (total and prostatic) is normal, and there is no roentgenographic evidence of metastases. A few urologists perform a radical prostatectomy on patients with very early Stage III prostatic cancer either following a course of hormonal therapy or in combination with some type of irradiation. The majority of urologists treat Stage III patients with endocrine therapy alone—namely, with estrogens, bilateral orchiectomy, or a combination of the two.

The combination of endocrine therapy to produce regression of the advanced carcinomatous lesion of the prostate followed by radical perineal prostatectomy has been advocated in selected cases by a few urologists. Scott[67] reported on a series of 31 patients with Stage III prostatic carcinoma followed for a period of ten years or longer after combined endocrine and extirpative therapy. Nineteen (61%) of the patients survived over ten years, and 16 of these men had no evidence of cancer. Seven patients in this series have died of prostatic carcinoma.

Flocks[68] followed 41 patients with extraprostatic extension for a period of five years or longer after radical retropubic prostatectomy, pelvic lymphadenectomy, and the instillation of radioactive colloidal gold solution ($Au^{198}$) as an adjuvant. Twenty-seven (66%) of the patients are alive after five years, but 2 have had a recurrence of their cancer. Thirteen patients in this series have died of prostatic carcinoma.

Other forms of definitive and adjuvant therapy for Stage III prostatic cancer patients include the systemic administration, direct intra-arterial injection, and extracorporeal regional perfusion of the prostatic area with antitumor drugs[69] and with radioactive phosphorus ($P^{32}$),[70] supervoltage radiotherapy,[71] cobalt teletherapy,[72] intravenous administration of diethylstilbestrol diphosphate (Stilphostrol®),[73] and other methods of hormonal manipulation.

In nearly every case where the carcinoma has spread beyond the confines of the prostatic capsule, the patient cannot be cured by radical prostatectomy. Excellent palliation, however, can be achieved in a great number of Stages III and IV patients by hormonal control of the cancer. This consists of the administration of estrogens, bilateral orchiectomy, or a combination of the two. Prior to the advent of hormonal therapy, advanced prostatic cancer was directly treated by various forms of interstitial irradiation. Beginning in 1941, Huggins and Hodges[9] published the first of a number of articles dealing with the effects of castration and injection of estrogen and androgen on patients with disseminated prostatic carcinoma. The rationale for hormonal therapy is based on the fact that adult prostatic epithelium of all types undergoes atrophy when androgenic hormones are greatly reduced in amount or inactivated. Bilateral orchiectomy is apparently beneficial by removing one source of androgenic hormone. Estrogens probably act primarily by inhibiting gonadotropins, which in turn are responsible for testicular androgenic activity. Estrogens may also inhibit extragonadal sources of androgen secretion, may directly neutralize androgens, and may have a direct cancerocidal effect upon the prostatic cancer cells. In 1939 Gomori[74] described a method for staining acid phosphatase in tissue sections. The enzyme was demonstrated not only in normal adult prostatic epithelium but also in the glandular epithelium of benign prostatic hyperplasia and in prostatic cancer cells. It was therefore postulated that castration or the administration of estrogens should cause retrogressive changes in the cancerous prostate and its metastatic lesions as well as in the normal gland. This androgen dependence has in fact proven to be present in approximately 70% of men with prostatic cancer.[9]

The remaining patients whose cancers do not respond to hormonal therapy show little or no resolution of their primary or metastatic lesions, and any clinical improvement that does occur is short-lived. The various reasons for hormonal failure are not known with certainty. Scott and Toole[75] have shown that patients with Grade IV, Stage IV prostatic cancers respond very poorly to hormonal therapy. Undifferentiated prostatic cancer cells seem to be less capable of producing acid phosphatase than well-differentiated carcinoma cells. In patients suffering a relapse following endocrine therapy, Woodard and Dean[76] found a marked decrease in tissue acid phosphatase concentrations. It seems, therefore, that a low tissue acid phosphatase concentration is associated with a poor response of the prostatic carcinoma to hormonal therapy. Scott and Vermeulen[77] observed an initial fall followed by a rise in urinary 17-ketosteroids following bilateral orchiectomy. This rise in urinary 17-ketosteroids following castration is due to an increased excretion of both adrenal androgenic and corticoid metabolites.[78] Therefore, increased adrenal activity may be another cause of relapse.

In order to properly evaluate the efficacy of endocrine therapy in the treatment of advanced prostatic cancer, the life expectancy of a "normal" 70-year-old man without carcinoma must be determined. Under these circumstances the expected five- and ten-year survival rates are 74% and 46%, respectively (Table 2). In 1946 Nesbit and Plumb[79] published follow-up data on 504 patients with advanced prostatic cancer cared for during the pre-endocrine era between 1925 and 1940. The five-year survival rate for 273 Stage III patients was 10%, and the five-year survival rate for 231 Stage IV patients was only 6%. Then in 1941 Charles Huggins published his first paper on the endocrine management of patients with disseminated prostatic carcinoma.[9] In 1950 Nesbit and Baum[80] published their often quoted series of 1,818 prostatic cancer patients treated by endocrine therapy. The endocrine therapy consisted of stilbestrol alone, bilateral orchiectomy alone, or a combination of stilbestrol and bilateral orchiectomy. Unfortunately, the patients receiving a combination of stilbestrol and orchiectomy were not always started simultaneously on the two. The five-year survival rates of 324 Stage III patients were as follows: 44% following stilbestrol and orchiectomy, 31% following orchiectomy alone, and 29% following stilbestrol alone. In terms of five-year survival, Nesbit and Baum felt that the combination of stilbestrol and orchiectomy gave the best results in the treatment of Stage III patients. As noted in this series and in other studies, the five-year survival rates for Stage IV patients were much worse than for Stage III patients regardless of

TABLE 2

FIVE- AND TEN-YEAR SURVIVAL RATES WITH ENDOCRINE TREATMENT OF PROSTATIC CANCER

| *Investigators* | *Type of endocrine therapy* | *Number of patients* | *Clinical stage* | *Percent five-year survivors* | *Percent ten-year survivors* |
|---|---|---|---|---|---|
| Normal 70-year-old male | ——— | —— | No cancer | 74 | 46 |
| Nesbit and Plumb[79] (1946) | None | 273 | III | 10 | |
| | None | 231 | IV | 6 | |
| Nesbit and Baum[80] (1950) | Orchiectomy plus estrogen | 324 | III | 44 | |
| | Orchiectomy alone | | | 31 | |
| | Estrogen alone | | | 29 | |
| | Orchiectomy plus estrogen | 263 | IV | 20 | |
| | Orchiectomy alone | | | 20 | |
| | Estrogen alone | | | 10 | |
| Emmett and associates[81] (1960) | None | 383 | III | 15 | 5 |
| | Orchiectomy with or without estrogen | | | 57 | 26.5 |
| | Estrogen alone | | | 35 | 11.5 |
| | None | 510 | IV | 0 | |
| | Orchiectomy with or without estrogen | | | 13.5 | |
| | Estrogen alone | | | 21 | |

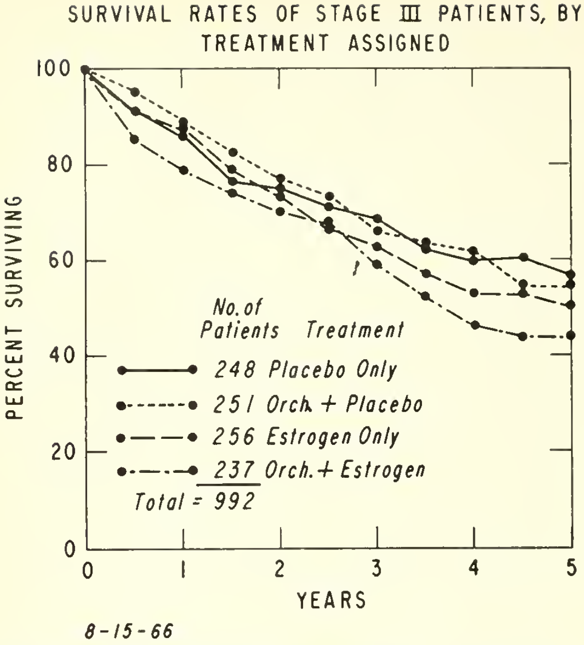


Fig. 13. Survival rates of Stage III prostatic cancer patients, by treatment assigned

the therapy employed. The five-year survival rates for 263 Stage IV patients were as follows: 20% following stilbestrol plus orchiectomy and following orchiectomy alone and only 10% following stilbestrol alone.

Emmett and associates[81] reported on 1,100 patients with advanced carcinoma of the prostate treated with various combinations of endocrine therapy. These investigators found that Stage III patients did better following "early" orchiectomy than they did with "early" estrogen treatment alone. Stilbestrol given at the same time or following orchiectomy did not seem to improve results. The five- and ten-year survival rates of Stage III patients receiving orchiectomy with or without stilbestrol were 57% and 26.5%, respectively; following stilbestrol alone, 35% and 11.5%, respectively; and with no hormonal therapy, 15% and 5%, respectively. In Stage IV prostatic cancer no one type of endocrine therapy was superior to another. The five-year survival rate of Stage IV patients receiving orchiectomy with or without stilbestrol was 13.5%, and following stilbestrol alone, 21%; with no hormonal therapy there were no five-year survivors. These investigators also found that endocrine therapy does not increase survival in patients with well-differentiated Stage III prostatic cancer. They did not advocate withholding endocrine therapy until metastases appear because of the usual ineffectiveness of all forms of treatment in Stage IV patients. Both Nesbit and Emmett have concluded that endocrine therapy is superior to no treatment in terms of five- and ten-year survival.

Mellinger and co-workers[55] have carefully studied an extremely well-controlled series of 2,057 prostatic cancer patients. There were 983 Stage III and 800 Stage IV patients in this cooperative study which began seven years ago and has continued up to the present time. In this study, Stages III and IV patients were all considered to be inoperable and received either a placebo alone, stilbestrol alone, bilateral orchiectomy alone, orchiectomy plus placebo, or orchiectomy plus stilbestrol. Treatment was randomized. The dose of diethylstilbestrol given in the study was 5 mg. daily by mouth. This dose of stilbestrol provides the patient with an estrogen level equivalent to that of the pregnant female. Out of 983 Stage III patients in the study, 66 have died of prostatic cancer up to the present time. Surprisingly, it was discovered that the survival rate of those patients receiving hormonal therapy of one sort or another was no better than that of those men receiving only a placebo (Fig. 13). Out of 800 Stage IV patients, 222 have died of carcinoma of the prostate. Although the survival rate of Stage IV patients receiving hormonal therapy was no better than that of

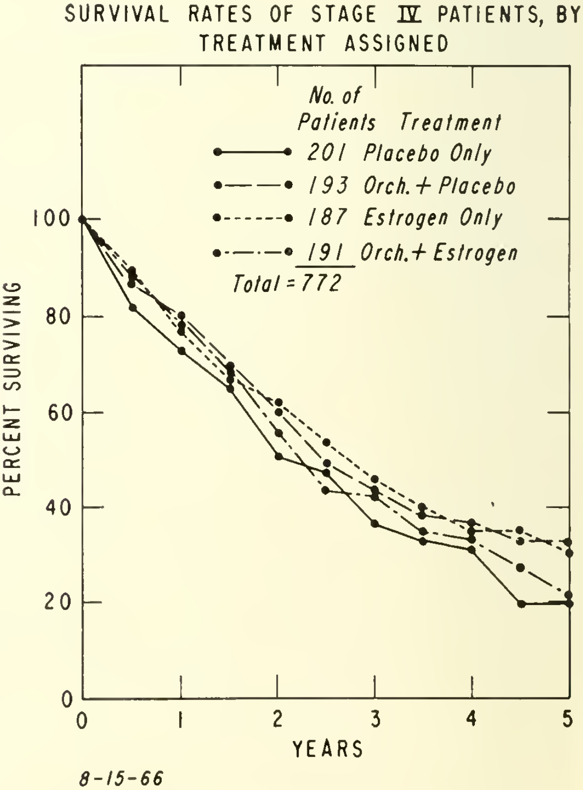


Fig. 14. Survival rates of Stage IV prostatic cancer patients, by treatment assigned

those receiving a placebo alone (Fig. 14), their symptoms were palliated to a much greater extent. The combined treatment by stilbestrol plus orchiectomy was demonstrated to be actually inferior to treatment by placebo alone, by stilbestrol alone, or by orchiectomy alone in Stage III patients. Endocrine therapy definitely reduced mortality from cancer of the prostate in both stages but apparently increased deaths from noncancerous conditions, especially cardiovascular diseases. All of these findings on analysis have been shown to be statistically significant. The exact mechanism or mechanisms by which estrogens contribute to these cardiovascular fatalities are being studied at the present time but may be related to increased sodium retention and possibly to alterations in the normal clotting mechanism. Mellinger feels that hormonal treatment should be withheld until the patient develops symptoms from his cancer.

Prostatic carcinoma has been treated with various estrogens—both natural and synthetic—which can be administered orally, intramuscularly, or intravenously in a dose ranging from 0.1 mg. to 1,500 mg. daily. Most of the estrogens used in the treatment of prostatic carcinoma are synthetic. These synthetic estrogens include diethylstilbestrol, chlorotrianisene (TACE®), polyestradiol phosphate (Estradurin®), and diethylstilbestrol diphosphate (Stilphostrol®).

Diethylstilbestrol, or simply stilbestrol, is the most commonly administered and least expensive estrogenic preparation and is usually given orally in an average dose of 5 mg. daily. Mellinger[1] believes that the administration of higher doses of stilbestrol is probably no more effective than the 5-mg. dose in the treatment of prostatic cancer.

TACE, which is a long-acting synthetic estrogen, is purported to offer certain advantages over stilbestrol. These advantages include [1] storage in body fat which in turn provides nonfluctuating hormone levels, [2] absence of secondary enlargement of either the adrenals or the pituitary, and [3] minimizing of edema due to sodium retention and minimizing of gastrointestinal symptoms. It is also administered orally in an average daily dose of 24 mg.

Estradurin is a long-acting, synthetic estrogenic preparation which is administered intramuscularly. It is reported to produce sustained estrogenic activity for as long as two to four weeks following a single intramuscular injection. The average dose is 40 mg. at monthly intervals.

Stilphostrol is a phosphorylated derivative of the synthetic estrogen diethylstilbestrol and can be administered both orally and intravenously. The oral dose ranges from 50 mg. to 500 mg. daily, and the intravenous dose ranges from 500 mg. to 1,000 mg. daily. When the cancer begins to lose its sensitivity to the hormone being administered, it may be found to be sensitive to still another estrogenic preparation.[82]

As previously mentioned, a positive tissue diagnosis of cancer should be made in every case with but one possible exception before hormonal treatment is initiated. The only exception is when there is unequivocal evidence of metastases as indicated by an elevated serum acid phosphatase, or characteristic osteoblastic skeletal lesions, or both, accompanying an indurated prostate in a poor risk patient. Contrary to prevailing opinions, estrogens are not innocuous. They frequently cause embarrassing and often painful enlargement of the breasts, changes in the appearance and texture of the skin, nausea, testicular atrophy, and a decrease in or loss of libido. They also make the possibility of obtaining a positive tissue diagnosis by biopsy in the future extremely unlikely. The histological changes induced by estrogen therapy are characterized by squamous metaplasia of the carcinoma and by atrophy of the cancer cells resulting in shrunken acini and small strands and knots of shrunken tumors cells within a fibrous stroma.[83] Estrogen administration is followed by a decrease in acid phosphatase concentration in the cancer cells.[76] Even more important, there is a strong possibility that the administration of estrogens may decrease the patient's life expectancy by increasing the incidence of cardiovascular complications.[55]

When bilateral orchiectomy is performed for prostatic carcinoma, total rather than subcapsular orchiectomy should be done. Following subcapsular orchiectomy, Leydig-like cells have been demonstrated to persist in the remaining tunica albuginea,[84] and these cells are apparently of functional significance.[85] If the patient objects to total orchiectomy for cosmetic reasons, Lucite testicular prostheses may be inserted. Lucite is light and causes very little tissue reaction.

Flocks,[86] in 1953, reported on 50 Stage III patients treated by interstitial irradiation with $Au^{198}$. $Au^{198}$ in a colloidal suspension is injected into and around the prostate through either a perineal, retropubic, transvesical, or transrectal approach. The results of $Au^{198}$ therapy have been difficult to evaluate, but it seems as if Flocks[87] has had good results in Stage III patients by combining interstitial irradiation using $Au^{198}$ with lymphadenectomy, with or without hormonal therapy. Employing this treatment, Flocks[88] reported a 34% five-year survival rate in a series of 135 patients with prostatic lesions comparable to Stage III cancer. Since this report in 1960, Flocks[89] has followed a total of 430 Stage III patients for a period of at least five years after $Au^{198}$ therapy. The five-year survival rate in this group was 47%, which is a marked improvement over the previously mentioned $Au^{198}$ series. $Au^{198}$ has a half-life of 2.7 days and emits predominantly gamma and beta rays. Complications of interstitial irradiation of the prostate and surrounding tissues with $Au^{198}$ include rectal ulceration, leukopenia, delayed wound healing, and an occasional perineal fistula.[89]

Interstitial irradiation of prostatic cancer with radioactive chromic phosphate and radioactive yttrium ($Y^{90}$) has up to the present time yielded results no better than those obtained using radioactive gold.[90]

Many Stages III and IV patients are first seen because of prostatism. If there is minimal prostatic obstruction, endocrine therapy may induce enough shrinkage of the prostatic cancer to alleviate the symptoms. If symptoms of obstruction are marked, transurethral resection of the prostate is indicated.

In summary, there is mounting evidence that hormonal treatment of Stage III and Stage IV prostatic cancer patients does not significantly increase their period of survival. The good results obtained by endocrine treatment in preventing death from prostatic carcinoma are nullified by the increase in cardiovascular deaths while on hormonal therapy. Therefore, the treatment of choice for both Stages III and IV cancer of the prostate is again no treatment at all until the patient develops symptoms from the carcinoma. Then endocrine therapy should be initiated. If the clinician wishes to take a chance and subject his patient to an increased risk of cardiovascular complications, administration of oral stilbestrol, 5 mg. daily, is probably the treatment of choice. Perhaps a smaller dose of stilbestrol will eventually prove to be just as effective against prostatic cancer as the 5-mg. dose but cause fewer cardiovascular complications. This is being investigated at the present time. In Stage III carcinoma, the results in terms of increased survival are just as good with stilbestrol alone as they are with bilateral orchiectomy alone and are superior to those with the combined use of stilbestrol and bilateral orchiectomy. As previously mentioned, urinary retention is treated by transurethral resection of the prostate.

### STAGE IV CARCINOMA

Stage IV indicates metastatic carcinoma of the prostate and can be assigned to a patient who has either an elevated total or prostatic serum acid phosphatase, osteoblastic skeletal metastases, positive lymph nodes in the neck or groin, or cancer cells in the bone marrow. Like Stage III prostatic cancer, the Veterans Administration Urological Research Group[55] feels that Stage IV patients should not be treated with stilbestrol or some other type of endocrine therapy until symptoms, such as bone pain, appear. When the cancer becomes resistant to one type of estrogen, alternation of estrogen preparations may induce a remission.[82] When all of the administered estrogens along with bilateral orchiectomy fail to control the bone pain from skeletal metastases or the other symptoms, additional forms of hormonal manipulation can be tried. These include [1] bilateral total adrenalectomy or the administration of cortisone and [2] ablation of the pituitary gland. Exposure of skeletal metastases to external beam irradiation or systemic irradiation with radioactive phosphorus has afforded temporary relief of bone pain in a large percentage of patients.

Huggins and Scott[91] in 1945 were the first to report on the results of bilateral adrenalectomy in the treatment of disseminated prostatic carcinoma. These investigators felt that adrenalectomy removed the only remaining source of androgens in patients who had suffered a relapse following orchiectomy and estrogen treatment. Since then others have performed bilateral adrenalectomy for metastatic carcinoma of the prostate in relapse and have reported varying degrees of subjective but very little objective improvement.[92]

Theoretically, the use of adrenal corticosteroids should accomplish the same end result as bilateral adrenalectomy since it has been demonstrated that the administration of corticosteroids to man results in a decrease in the urinary excretion of androgens.[93] Exogenous corticosteroids are most likely effective by inhibiting the pituitary secretion of ACTH, which in turn results in the suppression of adrenocortical production of androgens. Weinert and co-workers[92] postulate yet another but still unexplained mode of action of the adrenal corticoids in helping patients with relapsing prostatic cancer. The clinical results in terms of pain relief and general improvement following the administration of corticosteroids have been comparable to those seen after bilateral adrenalectomy.[94]

Hypophysectomy has been performed by a small number of investigators in the treatment of patients relapsing following orchiectomy and estrogen administration. Hypophysectomy acts by removing gonadotropins which stimulate testicular androgen production, by removing ACTH which apparently stimulates adrenal androgen production, and by removing growth hormone which may synergize the action of androgens and may in some other way be concerned with the growth of prostatic cancer.[95] The response to hypophysectomy compares favorably to that following bilateral adrenalectomy.[96] The indications for hypophysectomy in the treatment of relapsing Stage IV prostatic cancer are not well-defined. Perhaps the main indication for hypophysectomy is the continuous rise or sustained elevation of urinary androgens following estrogen therapy, orchiectomy, and the administration of cortisone.

External beam irradiation to painful skeletal metastases has produced a marked palliative effect in a large percentage of patients. The total tumor dose directed to a particular metastatic site may vary between 1,200 and 2,500 rads.[97]

An additional method of treating patients with intractable pain from skeletal metastases who have relapsed following castration and estrogen therapy is by systemic irradiation with radioactive phosphorus. Maxfield and associates,[98] in 1958, were apparently the first to report on the use of $P^{32}$ in the treatment of metastatic cancer of the prostate. Wildermuth and associates,[99] in 1960, and Parsons,[100] in 1961, reported on a technique of administration of radioactive phosphorus which was similar to that reported by Maxfield. Their method consisted of administering testosterone to stimulate bone and tumor metabolism, which in turn would enhance the uptake of $P^{32}$. According to Hertz,[101] the uptake of phosphorus in new bone formation is increased fifteen to twenty times by the administration of male hormones. Radioactive phosphorus is a beta emitter with a half-life of 14.3 days and can be administered either orally or intravenously. The method of treatment recommended by Parsons[100] will be described. Estrogen therapy is stopped, following which 100 mg. of testosterone is administered every day for a period of seventeen days. Beginning on the sixth day of testosterone administration, 1.8 mc. of $P^{32}$ is given orally every day for a total of seven days. Two weeks after completion of $P^{32}$ therapy, estrogen treatment can be restarted. By this time most patients have experienced marked relief of pain and other subjective improvement. The benefits derived from systemic irradiation with radioactive phosphorus are only temporary since pain usually returns within six months or less following completion of $P^{32}$ treatment. More recently, Kaplan and associates[102] have reported favorable results in Stage IV patients using $P^{32}$-labeled polymetaphosphate.

The results following all types of treatment for Stage IV cancer patients are uniformly poor. Stilbestrol may be give initially when the patient begins to have symptoms. It is doubtful whether large doses of stilbestrol are any more effective than the usual 5-mg. daily dose. When the cancer becomes resistant to stilbestrol, alternation of estrogens may produce a remission. The next logical procedure is bilateral orchiectomy if this step has not already been taken. When relapse following castration and estrogen therapy occurs, either cortisone, external beam irradiation to painful metastatic sites, or systemic irradiation with $P^{32}$ may be given. As a last resort, but before the patient becomes moribund, hypophysectomy should be considered.

A hemorrhagic diathesis is occasionally seen in patients with metastatic carcinoma of the prostate and is due to fibrinolysis and hypofibrinogenemia. Hemorrhages may occur spontaneously in Stage IV patients and are characterized by bleeding from the mucous membranes and into the skin. More often, however, this fibrinolytic syndrome appears during or after surgery in a patient with prostatic cancer, and it becomes evident when it is found that the patient's blood will not clot. Tagnon and associates,[103] in 1952, discovered that this condition is caused by a proteolytic enzyme, fibrinolysin. Later, Tagnon and Prout independently demonstrated that fibrinolysin is present in the normal prostate as well as in the cancerous prostate and its metastases. The fibrinolysin normally produced by the prostate is essential for the liquefaction of semen after it has coagulated. It is possible that in some cases the neoplastic prostate and its metastases produce an excess amount of fibrinolysin. An additional factor contributing to the hemorrhagic diathesis is an increased conversion of inactive profibrinolysin to the active enzyme, fibrinolysin. It has been shown that profibrinolysin, which is the inactive precursor of fibrinolysin, and inhibitors of the conversion process are found in low levels in the serum of patients with this syndrome.[104] Whatever causes the excess fibrinolytic enzyme, either blood fails to clot or if a clot is formed it quickly liquefies. This can be observed when blood is incubated in a clean test tube. There is also a depletion of fibrinogen stores, and in some cases the serum fibrinogen level may approach zero. The treatment of the spontaneous form of the syndrome is usually with estrogens. When there is hemorrhage during or following surgery due to fibrinolysis and hypofibrinogenemia, the treatment of choice is replacement of lost blood with fresh whole blood transfusions and the administration of human fibrinogen. Epsilon aminocaproic acid, which inhibits profibrinolysin activator and also fibrinolysin, should be administered intravenously.

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# Bisoxatin Acetate as a Postpartum Oral Laxative: A Random Double Blind Controlled Experiment in 106 Subjects

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MANY AGENTS have been used in postpartum patients to initiate bowel action. Wy-8138* (Bisoxatin Acetate®) is a new synthetic compound which has been shown to have a marked laxative action. The purpose of this paper is to present the results of a random assignment double-blind controlled study of bowel activity associated with its use in postpartum patients.

## METHODS AND MATERIALS

This study included 106 consecutively delivered volunteer subjects from the University of Minnesota Hospitals between April 11, 1966, and July 13, 1966. Each patient was assigned a number according to a random code. This placed her in 1 of the 2 drug groups and it also identified a sealed envelope containing 3 tablets to be used by her. All the tablets used in the study were identical in appearance. The women were given 1 of their tablets orally on the first postpartum day and if no bowel activity was initiated during that day they were given 2 tablets the following day. If there had been no bowel activity by the third postpartum day some other laxative was used, and the case was classified as being a study "failure." A data sheet was completed for each patient and this included the drug envelope number, the drug dosage, the number of stools per day, the quality of the stools, and side effects and whether other bowel treatment was required. At the completion of the study the random number code sheet was presented to the investigators and the data sheets were identified as to the type of drug taken. The 2 drugs studied were either Bisoxatin Acetate or a lactose placebo.

Since these data are enumerative they were statistically analyzed by a nonparametric technique of analysis using Chi-square contingency tables to determine the independence of the variables. The significance was determined by probability (p) scores.

The composition of the 2 groups was similar. The control group consisted of 52 women. The mean age was 24.9 years with a range of 18 to 41. There were 26 primiparous and 26 multiparous subjects. Thirty-six had an enema before delivery, none had general anesthesia, and 45 had episiotomies (36 LML and 9 ML).

The drug group consisted of 54 women. The mean age was 21.6 years with a range of 15 to 41. There were 29 primiparous and 25 multiparous. Thirty-six had an enema before delivery, none had general anesthesia, and 49 had episiotomies (43 LML and 6 ML). Thus, there were no significant differences between the 2 groups studied.

## RESULTS

The results of treatment are shown in Table 1. It should be noted that more than twice as many drug-treated subjects had bowel movements on the first postpartum day as were seen in the control group. Also, the "failure" group on the third day post-partum amounted to only 9.2% of the drug-treated subjects but it was 61.6% of the control subjects. These results are all statistically significant with a Chi square value of 32.4 in 2 degrees of freedom ($p<0.001$).

The presence of more than 2 bowel move-

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*Wy-8138 (2, 2-Bis (p-hydroxyphenyl)-2H-1, 4-benzoxazin-3 (4H)-one, diacetate) was kindly supplied and this study was supported by the Wyeth Laboratories, Philadelphia, Pennsylvania.

TABLE 1

TREATMENT RESULTS OF A DOUBLE-BLIND CONTROLLED STUDY OF BISOXATIN ACETATE IN NORMAL POSTPARTUM SUBJECTS TO INITIATE BOWEL ACTIVITY

| | *Drug group* (*N* = 54) | *Control group* (*N* = 52) |
|---|---|---|
| Initial bowel movement on Day 1 | 23 (42.6%) | 11 (21.1%) |
| Initial bowel movement on Day 2 | 26 (48.2%) | 9 (17.3%) |
| No bowel movement by Day 3 | 5 ( 9.2%) | 32 (61.6%) |

TABLE 2

SIDE EFFECTS IN THE DOUBLE-BLIND CONTROLLED STUDY OF BISOXATIN ACETATE IN NORMAL POSTPARTUM SUBJECTS

| *Side effects* | *Drug group* (*N* = 54) | *Control group* (*N* = 52) |
|---|---|---|
| More than 2 bowel movements per day | 13 (24.1%) | 0 (0 %) |
| Loose or watery stools | 28 (51.9%) | 1 (1.9%) |

ments on 1 day was considered unsatisfactory. This was not experienced in the control group but was seen in 13 or 24.1% of the drug group. Another side effect was the production of loose stools. In the drug group 22 or 40.8% had loose stools and 6 or 11.1% had watery stools. In 3 of these latter 6 cases medicine had to be given to stop the diarrhea. This complication occurred only once in the control group. These data are shown in Table 2.

## DISCUSSION

It has been shown that during pregnancy and the puerperium patients have problems with constipation due to the sluggishness of the bowels and decreased physical activity.[1] Because of this many have recommended the routine use of a laxative in the postpartum period. An ideal laxative would be one that is free of side effects, has a mild purgative action, and has optimal flexibility of dosage.

Bisoxatin Acetate is a synthetic compound with marked laxative action after oral administration. Schmidt and Seeger found in animal studies that the primary site of action is in the colon but there is also some stimulation in the small intestine. They also found the optimal effective dosage in rats to be 50 mg. per kilogram and the lethal dose of 50 to be 8 gm. per kilogram.[2] In a study of Baer, Bisoxatin Acetate was given to 188 patients starting on the third postpartum day. In 19.1% of the cases he was unable to initiate bowel activity starting with a dosage of 90 mg. and increasing to 150 mg. The interval between the administration of the laxative and the onset of bowel action was approximately six to eight hours. Increasing the dosage precipitated evacuation of the bowels in a shorter time, but this led to frequent defecation accompanied by watery stools. There was no change noted in the stools of infants who were being breastfed and it did not impair lactation in the mother.[3] Schrader used Bisoxatin Acetate in 81 patients with chronic constipation and 65 had "satisfactory to excellent" laxative effect produced. He felt that it was well tolerated with almost no side effects.[2] There have been many other clinical trials of this drug and each has shown the same pattern of results.

This controlled study has shown that spontaneous bowel activity in the first two days postpartum is uncommon (38.4%) in the untreated control subject. This can be changed with Bisoxatin Acetate. Using this drug the rate increases so that 90.8% of the subjects have had a bowel movement during the first two days postpartum. The results of treatment are also seen by the increase in side effects. There was only 1 instance of excess bowel activity in the control group, but 24.1% of the drug group had more than 2 bowel movements per day and 51.9% had loose or watery stools. Thus, in using this drug in postpartum subjects a lower dosage is recommended. Perhaps the subjects should be given only 60 mg. per day.

## SUMMARY

A random double-blind control study of an oral laxative (Bisoxatin Acetate®) was conducted in 106 normal postpartum subjects. The drug was effective in initiating bowel activity by the second postpartum day in 90.8% of patients as compared with only 38.4% of the control group. The incidence of excess bowel activity was also greatly increased with the drug and its use in the postpartum subject.

The authors wish to thank Mr. Howard Graven for his statistical assistance and also the hospital nursing staff for their cooperation in conducting this study.

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# *Section on* PAIN *and* DISTRESS

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## Equal Time for Psychiatrists

The time has arrived when the psychiatrist should have equal time for his opinion on contemporary practice of medicine. The pseudo-clever sayings of the physician and surgeon at the expense of the psychiatrist have wide currency and may do no harm. The psychiatrist must suffer the little barbs of his associates with good humor, but be ready nevertheless to make such a spirited riposte as to keep them on their metal. Dr. Szasz analyzes a predicament faced by many doctors who have had little opportunity to prepare themselves to deal with atypical pain.

J. S. LUNDY, M.D.

## The Painful Person

THOMAS S. SZASZ, M.D.

Syracuse

### I

The primary social function of the physician is said to be the relief of pain. As a rule, the physician tries, first, to diagnose the patient's illness, partly from pain and partly from other symptoms and signs; and, second, to control the pain by treating the disease which causes it. For example, if a patient with myocardial insufficiency complains of pain in the left arm, the physician does not amputate the painful extremity; instead, he seeks to promote improved coronary circulation. (He may also administer drugs to dull the patient's attention to pain.) The physician's difficulties in relieving pain in this way do not concern us here. We are interested, rather, in those situations where pain does not point to an underlying bodily disease and treatment does not attenuate or relieve pain.

The standard therapeutic methods of medicine fail in two types of situations—not just in practice, but in principle. The first is exemplified by the individual who is physically healthy but nevertheless complains of pain. A man may thus complain of pain in his penis and implore the doctor to "cut it off." If his request is not met, he may amputate his own penis. To be sure, such persons are diagnosed as suffering from the "disease" called "schizophrenia." But does schizophrenia "cause" and "explain" pain in the penis in the sense in which 'coronary insufficiency "causes" and "explains" pain in the left arm? And can "schizophrenia" be treated and thus the penile pain be relieved? The answer to both of these questions is no. In this type of situation, the physician is not confronted with a disease that causes or is manifested by pain; instead, he is confronted simply with pain, or with a complaint of pain, or with a painful person, or, last, but not least, with a person who tries to make the physician suffer. The treatment or control of pain here poses a different problem from that encountered in standard practice.

The second type of pain situation in which the usual medical approach fails is exemplified

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by the severely depressed and agitated person who complains of annoying bodily feelings, such as itching, headaches, lack of appetite, insomnia, backache, and so forth. Such a person has adopted—fully or partly, permanently or temporarily—the career of being sick and in pain. He does not want his pains allayed or relieved. What is the physician's task in this situation? Whose pain should he control: the patient's? That of his relatives, tortured by the patient's complaints? Or his own, generated by his inability to help the patient?

These examples place the problem of the relief of pain in its proper perspective.[1] Unless we wish to restrict our attention to purely medical and surgical considerations, we cannot even speak of the "treatment" of pain any longer. For the term "treatment" implies that the pain resides in a particular person, the patient, and can be influenced by altering the anatomy or chemistry of his body. But what about those patients whose pain is not of this kind? The experiences of these individuals and their relations to others, especially members of their family and doctors, is the proper concern of psychiatrists.

## II

One thing strikes the careful observer of patients with chronic pain (especially in cases without organic illness): it is that they are individuals who have made a career of suffering. At one time such persons may have been attorneys or architects, busboys or businessmen, models or maids; but when their careers fail or no longer suffice to sustain them, they become "painful persons"; or to paraphrase the French diagnostic term "tic douloureux," they become "hommes douloureux."

When referred to psychiatrists, patients of this kind are diagnosed as hysterics, hypochondriacs, schizophrenics, depressives, and so forth. These terms help neither patients nor doctors. The humanistic physician must try to understand such persons and see their life from their perspective, not his. To choose pain, suffering, and doctoring as a career means attending to the dysfunctions of the body and its repair. Many physicians dislike treating such patients. That is their privilege. A physician is not obligated to treat anyone whom he does not wish to accept as a patient, except in certain emergency situations. He may either refuse to accept the person as his patient, or, if he has accepted him, he may dismiss him from his care. To my mind, this is no more of a "rejection" of the patient than his being told that a mailman does not deliver cars. On the contrary, such a communication is an important clarification of the physician's role. Indeed, I believe that the imperfect definition of the role of healer is an important reason for the prevalence of certain kinds of painful complaints.[2]

This perspective on the problem of pain opens up certain hitherto unrevealed similarities between "painful persons" and others (both "normal" and "pathological") characterized by excessive or too intense attending. The mathematician, for example, attends intently to unsolved problems of algebra; the musician, to his yet-to-be composed sympony; the engineer, to plans for his new bridge; the detective, to his elusive criminal; the politician, to his "communist" or "fascist enemies"; the phobic, to his fears; the Don Juan, to his sexual appetite and its satisfaction; the paranoid, to his persecutors; and so forth.

When pain is chronic and "unbearable," so that it preempts the patient's complete attention, the situation resembles certain severe "mental illnesses," especially "compulsive" states, "agitated depressions," and "schizophrenic delusions." In each of these situations, we are confronted by individuals who, in the older language of psychiatry, are "monomaniacal"—that is to say, they have only one interest in life. Such persons are interested in nothing but their pet subject, and they impose it on anyone who happens to come into their orbit. This is what makes them social nuisances. However, by looking at this kind of behavior with some detachment, we can see how it resembles the behavior of many other persons—especially that of the political leader or religious zealot. Each of these persons is passionately convinced of the correctness of his own point of view and its overriding importance in world affairs, and each tries to impose it on as many other persons as he can. Those who possess political or religious power have the means to do so. They can command attentive audiences and compliant followers. Those who lack such power often have no one who will listen to them; hence, they resort to interpersonal coercion. This is exemplified by the conduct of many people said to be "mentally ill." The "paranoid schizophrenic," for example, may believe that his penis is the devil's hiding-place and try to convince the physician that it should therefore be amputated. "The persuader," as Minogue correctly emphasizes, "is not a man who must find solutions for problems, but one who must construct problems to fit pre-existing solutions."[3]

As pain constitutes the career of the painful person, so its diagnosis and relief constitute the career of many physicians. The passion of patients trying to persuade physicians to engage in this or that pain-relieving intervention is matched only by the passion of physicians recommending this or that pain-allaying treatment. Just as the "seriousness" of the patient's devotion to suffering is measured by his resistance to relinquishing his chosen career, so the "seriousness" of the physician's devotion to relieving pain is measured by his resistance to admitting defeat in his struggle against pain. Only in this light can we understand the wide variation among physicians in their attitude toward the patient with "untreatable" chronic pain. Some, especially neurosurgeons, never give up; they command numerous pain-relieving strategies—from operations on peripheral nerves to lobotomy. Others, especially general practitioners and internists, try to alleviate the patient's suffering, but only up to a point; when their drugs and patience are exhausted, they give up. Still others, especially psychoanalysts, do not even try, in a sense, to relieve the patient's pain; they will listen and talk to the patient, but not do anything to increase or diminish his pain. Their effort is confined to helping the patient help himself—if that is what he wants—to exchange his career of suffering for another occupation.

The choice of each of these careers, both as patient and doctor, is a personal matter. Severe, chronic illness does not necessarily lead to a career of pain, if the individual has something better to do with his life than to suffer. During his last years, Freud was afflicted with cancer of the oral cavity; he attended to his work, however, not to his illness. When he was younger, and the significance of his work was less secure, he was hypochondriacal. On the other hand, people free of physical disease often suffer from the most intractable types of pain. In such cases, unless the patient can find something more interesting and worthwhile to attend to, the career of pain is apt to last till death.

The physician's choice of the type of pain-relieving he will engage in is also a personal matter. I doubt that doctors become psychoanalysts, internists, or neurosurgeons because they come to believe that the methods of one of these specialties is more effective than that of another for relieving human suffering. It is rather the young physician's attitude toward suffering—and his efforts to master it by reflective acceptance, understanding, and distraction, or by more active methods of persuasion, drugs, and surgery—that determine his occupational choice and his subsequent conduct in the medical situation. For it is not only that "it is the sick man who creates the doctor,"[4] but also that the doctor creates the sick man. The "social and material relation [between doctor and patient]," observes Sartre, "is affirmed in practice as a bond even more intimate than the sexual act; but this intimacy is realized only by activities, and precise, original techniques engaging both persons. . . . Doctor and patient form a couple united by a common enterprise."[5] It is for this reason that a humanistic understanding and mastery of pain requires attention to the role and conduct of the physician no less than to the experiences and diseases of the patient.

## III

The concept of the "painful person" which I am proposing merits a more detailed description and analysis. I can do no more here than to indicate its most important features.

The painful person requires, as a condition necessary for his proper development, a social milieu pervaded by medical values and dominated by the physician. Indeed, it is here, and here alone, that this kind of human being can exist and flourish.[6] We might say, at the risk of caricaturizing the situation, that there is nothing a real physician loves more than a patient who suffers from bodily disease and who complains of pains that point directly to its cause and nature. A patient with "real" or "organic" pain is like the true penitent of medieval Christianity: He plays the role of patient "faithfully," thus allowing the physician to play his role as diagnostician and therapist. Conversely, there is nothing a real physician hates more than a patient who complains falsely of bodily illness (like the "malingerer") or who, though declared to be ill, refuses to play the sick role (like the "paranoid schizophrenic"). Such individuals are "medical heretics" who, by refusing to play the role of patient, frustrate the physician in his efforts to play the role of diagnostician and therapist.

Let us consider the actual case of a so-called "painful person," as presented by two nonpsychiatric physicians: "A woman of hysterical temperament began at the age of 16 to complain of abdominal pain so persistently that she accumulated a series of 12 to 18 abdominal operations, with what might be termed progressive evisceration. Following a trivial head injury, she complained so bitterly of pain in the head that a subtemporal decompression was performed. From 1934 to 1936 she was confined to bed because of agonizing pain in the back and limbs. . . . When we saw her for the first time, she appeared uneasy, would not give her history, and began wincing and overbreathing before the bed covers were turned down. She lay constantly on her left side and cried out if any attempt was made to turn her on her back. She defended herself with her right hand from any examination on her back and when the right hand was restrained and the region of the sacrum was gently stroked, she screamed and trembled violently. On account of exaggeration of the complaints with very little anatomic substrate, a diagnosis of conversion hysteria with polysurgical addiction was made." [The patient was subsequently lobotomized.][7]

Freeman and Watts, the authors of this account, regard this woman as having an "imaginary" illness. The question is: Why do these physicians, and so many others, interpret "imaginary" illness as itself an illness?

When a man imagines that his girl friend is the most wonderful person in the world and marries her, we call it "love"; when a man imagines that the president of his country is a great leader and goes happily off to war because he asks him to, we call it "patriotism"; but when a man imagines that his body is diseased and complains of pains, we conclude that either his body is sick or his imagination is sick. In short, as physicians, we do not let others imagine that they are ill; and we do not let ourselves imagine that some people can imagine (and desire) being sick.

Freeman and Watts are quite explicit about this. "We may say that an individual is suffering from imaginary ills," they write, referring to persons with functional psychoses and psychogenic pains. "Indeed, many people—doctors and laymen alike, and especially friends of the patient—say so either behind his back or actually to his face. . . . If instead of imaginary illnesses we speak of diseased imagination, we are probably no better off in the eyes of the patient, since to him his experiences are intensely real. . . . Nevertheless, the question of imagination in the onset and development of these mental ills cannot be taken too lightly. Indeed, in some instances it seems to be the outstanding feature whether or not the patient will admit it. It is in the instances in which insight into the condition is more or less lost that the clearest examples of a diseased imagination—or, if we will speak of it so, an imaginary illness—are presented to the physician."[8]

Is there a difference between an "imaginary illness" and a "diseased imagination"? Yes, indeed. An "imaginary" object differs from its "real" counterpart mainly in the response each calls forth from the audience before whom it is displayed. A stage murder evokes applause or boos for the actor, not cries for his arrest. Curiously, physicians never recommend treating mock illnesses in this way. If an illness is imaginary, as Freeman and Watts at first suggest, then it follows that the last thing the physician should do is to treat the subject as a patient! Doing so renders the sickness real and its bearer a genuine patient; it is like accepting a well-executed forgery of a Rembrandt as a masterpiece and hailing its painter as a great artist. To be sure, it is not wholly irrational to act this way. But it is confusing, especially when it is followed by fresh attempts to declare the illness not quite real but "mental" and its bearer not really a patient but "insane." This would correspond to accepting faked Rembrandts as masterpieces and then having separate rooms in a museum—some for real Rembrandts and others for forged ones. This, of course, is exactly what we do in contemporary hospitals: we have two sets of wards, some for patients with real diseases and others for those with faked ones.

However, by treating all persons who complain of pain and suffering as if they were sick, physicians in effect deny that exaggerated attention to the body and to painful "sensations" emanating from it may impart meaning and significance to a person's life. Hence, it need not constitute illness, or even the symptoms of illness. The medical proclivity for viewing everyone who complains of his body as sick is one aspect of a double denial: Physicians deny that suffering may be a meaningful career; at the same time, they maintain that persons to whom they ascribe suffering and sickness but who refuse to play the sick role deny the "reality" of their diseases. These phenomena signify a covert struggle for power—specifically, for the control of the medical relationship.

## IV

The portrait of the painful person may be broken down into the following principal components.

1. Pain is a subjective or personal experience. Especially if persistent, it is an experience actively created and fashioned by the self, rather than a sensation passively undergone or endured.

2. Acute or shortlasting pain is usually a symptom of bodily injury or illness. Chronic "intractable" or "unbearable" pain is often a sign that the sufferer wishes to occupy the sick role; in the absence of demonstrable bodily illness, it is the hallmark of l'homme douloureux.

3. As the physician's identity and social role are authenticated by his medical degree, so the identity and social role of l'homme douloureux are authenticated by his pain and suffering.

4. Complaints of pain of varying degrees of severity may be compared to varying levels of professional qualifications. The mildly hypochondriacal person has a bachelor's degree in pain; the more seriously disabled individual with delusion-like beliefs about his body, and perhaps with multiple encounters with surgical operations, has a doctor's degree in pain; whereas the patient usually described as suffering from "intractable" and "unbearable" pain (but no bodily illness) has, or lays claim to, a Nobel Prize in pain. Each type of individual is likely to have as his medical partner a correspondingly qualified expert in pain: the beginner in pain, a general practitioner; the advanced student, a general surgeon; and the champion, a neurosurgeon.

5. In the game of painmanship, the patient's aim is to produce undiagnosable pain and unrelievable suffering. This creates meaning for his life and power to control his human environment. The physician's aim is to categorize and "understand" the pain by attributing it to bodily illness or injury, or, that failing, to mental disease; and to control the pain and mitigate the suffering by curing the disease which "causes" it, or, that failing, by destroying the patient's capacity to produce, attend to, and complain of pain.

6. Chronic pain may constitute a career. It is to be expected, therefore, that "painful persons" often do not wish to relinquish the suffering which authenticates their role. Indeed, such persons crave medical and surgical (and not psychiatric) intervention, to make their role as sick patients legitimate.

7. Like other individuals deeply committed to their occupations or careers, the "painful person" lavishes his interest on his "work"; as the mathematician is preoccupied by equations and the composer by music, so l'homme douloureux is preoccupied by his pain and suffering. The lack of social acceptance of this concern, especially in the absence of demonstrable bodily disease, together with the complex personal relations with physicians which such persons and circumstances engender, create the clinical problems of so-called chronic or persistent pain. These problems baffle, annoy, and enrage the people who live with such persons, and frequently also their physicians.

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This is an abbreviated version of a paper presented at the International Symposium on Pain, Faculté des Sciences de Pairs, Laboratoire de Psychophysiologie, Paris, April 11-13, 1967. The complete text, titled "The Psychology of Persistent Pain: A Portrait of L'Homme Douloureux," will be published in the *Proceedings of the Symposium* by The Academic Press, London.

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## Pain Relief for the Patient at Risk

The search for pain-relieving methods continues, especially for the patient whose physical condition is poor enough so that a surgical procedure may be of such risk as to make it unjustifiable. This makes the question of temporary nerve blocks one to be considered. But if the duration of relief is short, or if the current techniques are not available, there may be a happy midpoint where a technique as described in this article may approximate currently ideal treatment.

JOHN S. LUNDY, M.D.

# Cordotomy: 1967

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THE OBJECT OF THERAPEUSIS is the cure of disease and the abolition of its symptoms and signs. Unfortunately, cure may not always be possible, and symptoms remain. There are also instances when disease may be eradicated, but its sequelae produce invalidism through the presence of persistent, intractable pain. The physician's responsibility continues, for such a patient may be as pitifully incapacitated as if his basic disease had never been treated. He demands relief and a return to tolerable existence. Even with rampant malignancy, many patients remain functional, socially and economically, if they are not suffering from the anguish of pain or narcotic addiction; and certainly, the cured or the individual with benign disease deserves every effort in the attempt to regain his normal capacities. With the development of percutaneous techniques for the interruption of spinal pain pathways, a method is available for the easy, efficient, and low-risk relief of pain in an extended range of intractable conditions.[1–5] The author will review his personal experience with 315 consecutive percutaneous cordotomies in 200 patients for whom this advance in technique proved to be of gratifying benefit.

### TECHNIQUE

The technique of percutaneous cordotomy will be presented briefly. The operation is done in the radiology suite. The patient is premedicated and his head is placed in a special head holder on an X-ray table. A lidocaine (Xylocaine®) wheal is raised beneath the mastoid process contralateral to the side which is painful. The lateral spinothalamic tract, the object of destruction, is a crossed tract carrying pain impulses and temperature from the opposite side of the body below the point destroyed. An 18-gauge, thin-wall, spinal needle is inserted laterally through the anesthetized area into the spinal canal between the first and second cervical vertebrae. Ten milliliters of air are injected after cerebrospinal fluid is withdrawn so as to outline the spinal cord. The needle is guided with the aid of lateral and anteroposterior roentgenograms or by viewing the position of the needle on an omnidirectional cineradiographic unit. Final position is achieved by correction with a stereotactic micromanipulator. Then a stainless steel electrode is inserted into the ventral quadrant of the spinal cord (figure). A radiofrequency current is applied to the electrode for five-second increments to produce a permanent spinal lesion.

The patient is awake and alert so that he can be tested between each exposure to ascertain the level of analgesia. The level may be seen to rise

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Needle and electrode after placement for cordotomy

from the foot to the leg, to the thigh, to the abdomen, and upward, depending on the time the current is flowing. The longer the time, the larger is the volume of tissue destroyed. Despite the fact that the electrode is inserted between C-1 and C-2, it is still possible to limit analgesia to any level desired. It is not necessary to produce analgesia in the arm or hand in the patient requiring only pain relief in the lower extremity, but it is possible to provide analgesia on a side as high as the occiput by creating a more extensive lesion.

The entire procedure may be accomplished in as short a time as eight minutes with the cineradiographic unit, although the average is twenty-five minutes, with a range from eight to eighty-four minutes. The procedure using conventional X-ray or light-polarizing techniques takes longer, an average of forty minutes, with a range from twenty to ninety-three minutes.

### RESULTS

The 200 patients ranged in age from 18 to 89 years (Table 1). Men predominated because of the inclusion of patients from a Veterans Administration Hospital. The cordotomies were done to alleviate pain resulting from the conditions listed in Table 2. Seventy-nine percent of the patients were afflicted with cancer, lung and gastrointestinal being most common. Almost half the painful areas were in the neck and upper extremity (43 patients) and upper chest (44 patients). In 40 patients, the pain was in the abdomen or perineum, and in 73 it was in the lumbar area, hip, or lower extremity.

A total of 315 cordotomies were performed on 200 patients, 62 on the right side, 63 on the left, and 75 bilateral. Since the 75 patients with bilateral pain required two cordotomies each, there was a total of 275 planned procedures. The remaining 40 cordotomies were repeated because of an inability initially to position the electrode successfully—3 instances—or because of inadequate analgesia. When a repeat cordotomy was necessary, analgesia was achieved with the second procedure, although there was an occasional case which necessitated a third attempt.

As would be anticipated in reviewing the areas of pain reference, it was necessary that relatively high levels of analgesia be achieved (Table 3). Levels were sought which would be sufficiently cephalad to control the pain and to

TABLE 1

DISTRIBUTION

| *Age* | *Male* | *Female* |
|---|---|---|
| 10 - 19 | | 2 (18) |
| 20 - 29 | 1 | |
| 30 - 39 | 11 | 6 |
| 40 - 49 | 27 | 14 |
| 50 - 59 | 34 | 28 |
| 60 - 69 | 34 | 17 |
| 70 - 79 | 15 | 6 |
| 80 | 1 | 4 (89) |
| Total | 123 | 77 |

TABLE 2

DIAGNOSES

| *Malignant* | | *Benign* | |
|---|---|---|---|
| Lung | 43 | Discogenic | 16 |
| Gastrointestinal | 38 | Vasculopathy | 6 |
| Genitourinary | 16 | Dysesthesias | 3 |
| Uterus | 12 | Neuropathy | 3 |
| Breast | 12 | Fractures | 3 |
| Pancreas | 10 | Incisional | 2 |
| Sarcoma | 8 | Osteomyelitis | 2 |
| Lymphoma | 6 | Phantom | 2 |
| Undifferentiated | 4 | Miscellaneous | 5 |
| Melanoma | 3 | | |
| Thyroid | 2 | | |
| Miscellaneous | 4 | | |
| Total | 158<br>(79%) | | 42<br>(21%) |

allow for possible regression of the level. Further, the technique could be controlled so as not to render analgesic the upper extremity, if this was not specifically necessary.

Present follow-up levels are listed in Table 4. Almost one-half of the patients showed sustained analgesia without change. In a large number the levels were higher due to secondary necrosis about the cordotomy lesion. A smaller group had a decrease in the level of analgesia but usually not sufficient to render the cordotomy ineffective, as the initial levels were planned to reach four to six segments higher in order to allow for a possible later recession. Those cases in which the analgesia became "spotty" or in which the levels disappeared required a repeat procedure. The "spotty" effect resulted from incomplete destruction by the radiofrequency current; only a few vitally located fibers can reactivate the pain. Levels disappeared when the electrode lay on the spinal cord, instead of in it. When lying on the cord, application of current to the electrode would achieve a temporary effect. It was not always possible to determine visually at the time of the procedure that such was the case; the patients reported analgesia when tested, and thus were thought to have successful cordotomies.

The morbidity and mortality in these 315 procedures are listed in Table 5. Paresis was seen in 14 instances. The weakness was persistent, however, in only 3 cordotomies, and these, too, would have been temporary had the patients lived long enough to rehabilitate. Unfortunately, they died before their paresis disappeared and, hence, are to be found in the permanent column. The range over which weakness lasted was one day to seven weeks.

Ataxia was always temporary, lasting two to fourteen days, except for one patient who died before recovery was complete. This was associated with ipsilateral hypotonia and decreased reflexes; it was thought to represent interruption of the ventral spinocerebellar tract which lies adjacent to the spinothalamic tract. Otherwise, compensation was usually rapid and complete.

Urinary retention followed 18 cordotomies, usually when the second side of a bilateral cordotomy was done. Many of the patients had abnormal micturition prior to cordotomy due to the presence of disease in or about the neural structures supplying the bladder; nonetheless, the number of catheterizations was low. The bladder data do not apply to those patients who presented for cordotomy with cystostomies or catheters in situ. Information relative to sexual function was difficult to obtain. Only a single instance of impotency was recorded, and this under circumstances where the disease process could have been incriminated as easily as the procedure.

There were 7 cases of postcordotomy dysesthesiae. This is a syndrome in which there appears a sensation of distressing burning throughout the area of analgesia. It is thought to be a central state of hyperresponsiveness of the spinal cord to any form of afferent stimulation. The discomfort could be interrupted temporarily by the application of anesthetic ointments or occlusive dressings which diminish or abolish the initiation and propagation of peripheral stimuli.

The relative absence of untoward vasomotor reactions was notable. A significant decrease in blood pressure at the time of cordotomy was

TABLE 3

IMMEDIATE LEVELS

| | |
|---|---|
| Cervical | |
| II-IV | 138 |
| V-VIII | 19 |
| Thoracic | |
| I-IV | 78 |
| V-XII | 66 |
| Segmental | 4 |
| No level | 10 |
| Total | 315 |

TABLE 4

FOLLOW-UP LEVELS—CORDOTOMY

| | |
|---|---|
| No change | 126 |
| Higher (average 5 segments) | 77 |
| Lower (average 4 segments) | 60 |
| Spotty | 27 |
| Disappear | 15 |
| No level | 10 |
| Total | 315 |

TABLE 5

COMPLICATIONS IN 315 CORDOTOMIES

| *Temporary* | | *Permanent* | |
|---|---|---|---|
| Paresis | 11 | Paresis | 3 |
| Ataxia | 60 | Ataxia | 1 |
| Bladder | 18 | Bladder | 0 |
| Sexual | 0 | Sexual | 1 |
| Dysesthesiae | 0 | Dysesthesiae | 7 |
| Hypotension | 3 | Hypotension | 0 |
| Respiratory | 2 | Respiratory | 1(10?) |

Deaths per 200 patients 1(12?)

seen on only three occasions, all transient, all responding to change in position or mild vasopressors or both. Hypotension was observed secondary to cardiovascular collapse due to pulmonary insufficiency; respiratory complications were few, but when seen, were life-threatening.[6] There were three established cases of primary apnea, and another 10 patients developed respiratory symptoms in the postcordotomy period. However, it was not possible to determine whether their distress was secondary to preexistent pulmonary disease or generalized debilitation, or whether cordotomy was responsible or contributed to their insufficiency directly.

When primary apnea was observed, it took a characteristic and bizarre form. Although the patients may have had a feeling of dyspnea shortly after the cordotomy, there were no objective clinical evidences of distress. In each instance, to date, the patients have had an hysterical personality leading to periods of hyperventilation before, as well as after, their procedure. This may lead the uninitiated observer to invoke a psychiatric diagnosis, when evaluating this subjective complaint, only to find the patient, on the second or third postoperative day, asleep and apneic. When the subject was awakened, and if hypoxia had not occurred, respiration resumed at normal levels. He became apneic again when natural or fatigue-induced sleep recurred. This problem persisted intermittently for three to four weeks, in one patient three months, so best management required tracheal intubation, tracheostomy, and artificial ventilation. In the absence of preexistent or complicating pulmonary disease, the patient can be weaned from the ventilator to return to normal activity.

It will be noted that Table 5 lists one permanent apnea and 10 question marks in parentheses. These 10 were all terminally ill patients, the majority with severe pulmonary disease, who eventually died of their lung pathology. It cannot be stated whether the cordotomy was either responsible or contributory to their demise, and postmortem examinations did not resolve the issue. The mortality column shows one definite and 12 questionable deaths due to cordotomy. The single definite mortality was respiratory, as described above. The other twelve died in temporal proximity to the procedure, probably as a result of their disease.

The ease with which percutaneous cordotomy is tolerated is exemplified by the number of hospitalization days. The average number of hospital days following cordotomy was three and six days, respectively, for the uncomplicated unilateral and bilateral procedures. In cases complicated by morbidity, the average stay was eleven days, whether a unilateral or bilateral procedure.

Follow-up observations have been completed through six weeks in all patients and through one year in more than 60% (Table 6). Initial results indicate complete or satisfactory pain relief in 93% of the patients. Complete pain relief was defined as no sensation of pain whatsoever. When the patient stated he had some pain, but did not require analgesics, the result was classified as being satisfactory. All the patients in the unsatisfactory category had pain necessitating the use of narcotics. Unsatisfactory results were found when levels disappeared or analgesia became spotty. The table is cumulative, so that some unsatisfactory results may fall out at a later date, either because the cordotomy was repeated and thus was converted to a complete or satisfactory result or because the patient died. The unsuccessful cases listed at each examination time refer to the same patients throughout, not to additional patients. The radiofrequency lesions appear to be permanent as judged by sustained levels in patients reaching the one-year mark in this report and in those now approaching two years in our total experience.

TABLE 6

FOLLOW-UP RESULTS–PATIENT

| *Pain relief* | *Immediate* | *6 wk.* | *3 mo.* | *6 mo.* | *9 mo.* | *12 mo.* |
|---|---|---|---|---|---|---|
| Complete | 172 | 110 | 78 | 39 | 17 | 5 |
| Satisfactory | 14 | 13 | 12 | 8 | 7 | 1 |
| Unsatisfactory | | | | | | |
| Spot, slip | 5 | 9 | 11 | 3 | 3 | 1 |
| Disappeared | 2 | 2 | 2 | 1 | 2 | |
| Unsuccessful | 7 | 8 | 6 | 5 | 2 | 2 |
| Total patients | 200 | 142 | 109 | 56 | 31 | 9 |
| Cumulative dead | | 58 | 84 | 108 | 115 | 117 |

## DISCUSSION

Before the development of percutaneous techniques for cordotomy, the indications for surgical interruption of spinal-pain pathways were so rigid as to exclude from treatment a majority of sufferers. Only persons with intractable pain on enlarging doses of narcotics with presumed longevity of more than three months and in general condition to withstand a major operative procedure were candidates for surgery. At the other extreme, there were also many patients with chronic pain of nonmalignant nature, potentially if not, in fact, addicted to narcotics, who were "not sick enough" to justify the risks of surgery. Some patients were subjected to alcohol or phenol blocks. In many, the initial results of the block were quite satisfactory, although intrathecal administration was not without adverse effects. Those patients who survived for longer periods commonly had recurrence of pain and then were offered surgical cordotomy. However, the threat of another operation, a high complication rate, and prolonged hospitalization produced strong psychological resistance in the patient, family, and referring physician. Relative to the number of patients requiring palliation, only a few presented for the standard cordotomy—10 to 15 a year in most major medical centers.[7]

Percutaneous cordotomy, however, has made open section obsolete. Anyone with intractable pain and in a state of health able to withstand a spinal puncture becomes a candidate for the procedure. This includes patients in whom nerve block would require many injections in order to attain pain control. Although percutaneous cordotomy may be viewed by some with no greater a concern, psychologically, than a standard nerve block, it must still be remembered that percutaneous cordotomy has as its object destruction of the pain tract in the spinal cord. As such, it is no less serious a procedure than open surgery, despite its ease of accomplishment, reduction in morbidity, and relatively mild discomfiture.

Bilateral high cordotomy does carry the risk of respiratory complications. Sleep-induced apnea remains a concern, since the other complications are so low and temporary if the patient lives long enough to compensate. The surgical risks of paresis, up to 45%, and bladder dysfunction, up to 100%, are spectres of the past.[8–12]

Percutaneous cordotomy is now being done at an increasing number of medical centers, and others have confirmed the results reported in this study.[5] It appears that the percutaneous technique will replace standard laminectomy and surgical section. Thus, it has become possible to abolish pain efficiently and simply. Now, every effort must be made to achieve relief early in the course of disease, when the chronic nature of the disorder has become established and narcotics are first prescribed. The challenge is clear, and the medical profession must be prepared to accept its responsibility in the management of pain problems. In the year 1967, the methodology is available. This report is presented with the hope that its contents will be transmitted to those whose needs are such as to be benefitted by the implementation of this procedure.

## SUMMARY AND CONCLUSIONS

Percutaneous cordotomy is a simple, effective technique for relieving pain below the level of the mandible. Initial results indicate that 93% of the patients receive complete or satisfactory relief of pain, and levels of analgesia are maintained. Permanent complications are infrequent—three pareses, no bladder dysfunction requiring catheterization, and one sleep-induced apnea. It is concluded that percutaneous cordotomy is a highly effective and relatively safe method for the relief of intractable pain of both malignant and benign origin.

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# *Book Reviews on Pain . . .*

THE ECOLOGY AND ETIOLOGY OF HUMAN DISEASE *by* KINGSLEY M. STEVENS, M.D., *201 pp., Charles C Thomas Co., Springfield, Ill., 1967. $7.50*

It is fortunate for medical men that concerned scientists have at last brought out the American Lecture Series in Clinical Microbiology so that the physician's efforts may be redirected to the goal of curing people more directly and with logical hope of success.

Physicians may read Dr. Stevens' book with the assurance that they will have had a good short course in the knowledge which was not available to them in medical school.

This book tells the story of the struggle of a human being to exist in his current environment while equipped only with ancient natural processes of defense against disease and bad habits. The lifesaving role of oxygen, which is constantly emphasized and explained as the single most important element in man's life, is outlined by the author, a microbiologist first and general biologist in fact. As editor Balows points out in the foreword: ". . . concern here is with relationships between micro-organisms and disease—any micro-organism and any disease. Implicit in these relationships is the role of the host which forms the third arm of the triangle: micro-organism, disease and host.

"The reader, who may be a 'specialist' in immunology, microbiology, biochemistry or medicine, should also consider himself to be a biologist. . . . The ultimate conquest of disease, if it is ever to come, will not be accomplished by drugs, or by surgery or by genetic manipulation unless due consideration is given to man's ecologic niche and the overall response when man is changed in an unchanged environment or vice versa.

"In this book Dr. Stevens develops the thesis that the oxygen tension in tissues is the major variable which determines health and disease."

In the preface the author points out that the question of what material should be utilized in teaching medical men boils down to that which can be used in teaching general principles. "These principles should be so fundamental that any new details, acquired with the passage of time, can be fitted readily into this basic framework. Unfortunately, however, there are few basic principles taught in medicine. Medicine is a branch of human biology and therefore of general biology. It is apparent that any broad principles of medicine must really be principles of general biology. In the case of human disease, the most relevant area of general biology is that of ecology, in which factors in the environment of the organism are studied in relation to their effects upon the organism."

The background for this book is based upon an understanding of the essential requirements of life, based on the contribution of four men: Charles Darwin's concept of evolution by natural selection in 1859; Gregor Mendel's basic laws of genetics; the concepts of heat by Sadi Carnot and his studies of heat transference, which resulted in what is now known as the second law of thermodynamics; and Antoine Lavoisier's demonstration earlier that the rapid production of heat by fire was due to the combination of oxygen with the material burned.

In explaining the control of cell division, the author points out that the "major controlling factor for cell division in true fungi, bacteria, and protozoa in mammals is the oxygen tension. In mammals some cell types require a high oxygen tension to divide at appreciable rates, while other cell types will divide only when the oxygen tension is low."

About arteriosclerosis and aging he says, "A crucial concept required for an understanding of arteriosclerosis and atherosclerosis is that the oxygen intake of a mammal is strictly limited. It is true that for short episodes a man can raise his oxygen intake several fold, but such increases are never maintained for more than a few days at most. For longer periods, he can only maintain a sustained increase of some 50% over his basal oxygen intake."

In discussing the evils of our diet, the overeating of fat is stressed. "Hence the conclusion is inescapable that if a man is on a high fat diet, his use of oxygen will be so great that the tissue $pO_2$ must fall below the levels found when on a low fat diet. When the tissue $pO_2$ falls, proliferation of fibroblasts will occur in those areas with the decreased oxygen tension. Collagen will be formed which subsequently decreases oxygen diffusion. A vicious cycle has begun.

"The basic distinction between arteriosclerosis and atheromas therefore lies in the cell types involved. Arteriosclerosis results from fibroblastic proliferation within the arterial wall followed by collagen deposition while atheromas represent fatty degeneration of smooth muscle. . . . Man's habits have changed but his biology has not and he must pay the price.

"Americans who smoke cigarettes have an increased incidence of coronary atherosclerosis compared to nonsmokers. This is, of course, in addition to the basal effects of the high fat American diet. Nicotine is a vasoconstrictor of small vessels and it may thereby decrease oxygen transport to cells.

"Arteriosclerosis begins early, especially for Americans and others having high fat diets. A study of coronary arteries in American men dying from trauma showed fibroblastic proliferation in all patients over age twenty.

"Even if a man were able to maintain his oxygen supply he could not live forever. This is due to the construction of his central nervous system. The second law of thermodynamics demands that in any system, inorganic or organic, entropy must continually increase until an absolute equilibrium state is reached.

"The factor controlling molecular motion is the absolute temperature stability. Stability for an infinite time would occur only at absolute zero, –273°. Hence, the longest-lived animals are not the mammals but the highest forms with lower temperatures, i.e., the reptiles. No organism which contains a central nervous system can live for periods in excess of a few hundred years. . . . However, sequoia trees and certain other western conifers have life spans which may reach 5000 years."

On the question of hypertension, the author points out that: "In the case of essential hypertension, the dietary item now consumed in gross excess is sodium chloride. . . . The actual metabolic need for salt in man may be less than a gram daily. In communities where the average daily intake of salt is 28 grams, hypertension is present in almost 40% of the population." He summarizes saying: "Hypertension is most often of renal origin and is dependent upon a chronic decrease in the oxygen tension at the surface of the juxtaglomerular cells."

In his consideration of carcinoma he remarks: "The rate at which a carcinoma progresses probably reflects primarily the extent to which the mutations permit divisions at very low oxygen tensions. . . . Carcinomas arise from Type I normal body cells which can divide only under high oxygen tensions. The carcinoma cell represents a mutant which can divide under both high and low oxygen tensions."

Under the subject "The Immunological Troops" the author makes some interesting observations: "The thymus forms stem cells for delayed hypersensitivity but has only partial control of the stem cells for humoral antibody formation. The appendix may also partially control stem cell formation for humoral antibody."

In the chapter on "Bacterial and Mycotic Infections" the author says blood transfusions are of an anaphylactic nature and, "Transfusion reactions are therefore essentially similar to endotoxic shock even though transfusions may produce immunologic damage (hemaglobinemia) with shock following later due to renal shutdown."

Dr. Stevens says that syphilis is the classic example of an autoimmune disease. It results from delayed hypersensitivity to Treponema pallidum. This continued reaction produces the anaerobic conditions mandatory for the growth of the Type V treponema.

He says: "Mycobacterium tuberculosis is an obligate mammalian parasite while Histoplasma capsulatum and Coccidioides immitis are both soil microbes which accidentally infect man."

The material discussed in Chapters 9 through 18 ranges from various types of infections, autoimmune diseases, and leukemia to serum sickness, drug reactions, and estrogens as chemical regulators.

The book contains both an author and a subject index, and a very adequate bibliography appears at the end of each chapter. The author goes into considerable detail in explaining his unusual concept of the numerous angles that he has considered in this book and ends with the statement: "Medicine has always been one of the most important factors in cultural evolution as well as the leader in understanding man's biological heritage. It therefore has the clear responsibility to take a leading role in adapting the cultural patterns to meet the fixed requirements of biology."

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## PATHOLOGICAL PHYSIOLOGY FOR THE ANESTHESIOLOGIST *by* ROBERT HUDSON SMITH, M.D., *580 pp., Charles C Thomas, Springfield, Ill. 1966. $17*

The author has tried to provide a source of information that he found lacking when he was preparing for his board examinations. He has presented this material in 3 sections. Section I deals with pathological states existing in the patient at the time of anesthesia. These states or conditions are those other than the pathology for which surgery is projected, and they affect the anesthetist's selection and management of the procedure.

Section 2 is concerned with abnormal states and disordered function which develop during anesthesia and surgery.

Section 3 is concerned with special problems incident to the site and nature of the pathology for which the surgery is being done.

Techniques are not a part of this book and treatment seldom is stressed. It is hoped that the anesthesiologist can use the material assembled here to aid him in providing better patient care.

The book is indexed and has a subject index. The references for each section are included individually.

This voluminous book, which attempts to cover a great many of the problems due to pathological physiology, cannot cover all phases of the subject. For example, in Chapter 27 on alcoholism, there is no mention of allergy to alcohol. Even an experienced person might go a lifetime with not more than one such case. It is not a serious matter that the author does not mention this and it is no detraction from the general usefulness of this excellent book.

JOHN S. LUNDY, M.D.

## PERIDURAL ANALGESIA AND ANESTHESIA *by* P. C. LUND, M.D., F.A.C.A., *with a foreword by* H. R. GRIFFITH, M.D., *379 pp., Charles C Thomas, Springfield, Ill., 1966. $13.50*

In the foreword, Dr. Harold Griffith acknowledges his satisfaction in this presentation, by Dr. Lund, his former pupil, of a phase of anesthesia which Dr. Griffith himself seldom used. Dr. Griffith's interest was mainly in general anesthesia. His contribution of relaxation by Curare permanently changed the character of general anesthesia. He, thereby, suddenly provided the necessary relaxation for surgery that has always made regional anesthesia so attractive to the surgeon. The surgeon, therefore, was often independent of general anesthesia, since he could do the regional anesthesia himself, if he cared to learn the technique.

In his preface the author makes it clear that this book is primarily intended to help those physicians who are interested in peridural analgesia, but are unaware of its various facets and numerous applications. The author has assembled a rather thorough survey of the literature on the subject. He has emphasized, however, modern writers rather than older ones. One of the interesting chapters in the book is the historical aspects presented in chapter 1. The author discusses the use of peridural anesthesia and analgesia for surgery, obstetrics, and chronic pain. Many of the essential and technical points for carrying out this method are described and illustrated. The book is an excellent illustration of the great advantage of an author limiting himself to one method and describing it in detail—since it is not likely that one man will have such a great clinical experience that he can describe in detail a number of methods of anesthesia. The book is a must for those who would perfect their technique in this field.

The book is quite well illustrated, especially to bring out anatomical landmarks. It is printed on good paper, is easily read, and has an author and subject index.

JOHN S. LUNDY, M.D.

# Carl Gustaf Arvidson, M.D.

J. ARTHUR MYERS, M.D.
Minneapolis

THE TRUE and ultimate value of a human life cannot be evaluated until it is completed. To have been in close touch with a person from the day he entered medical school until he died fifty years later, entitles one to assess his usefulness during life and qualities which can be profitably emulated by his successors. Hence, this brief sketch of the life and works of Carl Gustaf Arvidson, who was born in Stockholm, Sweden, on March 24, 1891. When he was a young lad his mother died. He felt her loss so deeply that at the age of 15 he decided to seek a new life in America. He came to Minneapolis and stayed with his aunt and her family.

For a time he worked as an errand boy for Mr. Swan Turnbladh, owner of the Svenska Amerikanska Posten. From 1906-07 he worked as a press fitter at the John Leslie Paper Company, Minneapolis. In 1907 he was special delivery boy for L. S. Donaldson Company and in 1908 he was ice cream manufacturer for their tea room. Mr. Donaldson took a special interest in Carl. Among other helpful advice, he urged him to save 10 cents each day.

Carl entered the old South High School, but because the students laughed at his English, he threw down the Saturday Evening Post from which he had been reading aloud and walked out of that school, never to return. Fortunately an elderly Dr. Princell, a doctor of divinity in the Swedish Free Church, who was also an educator, took an interest in Carl Gustaf and enrolled him in the Free Church Institute in Chicago. There he waited on tables and did odd jobs for his board and room from 1908 to 1911. He then won a scholarship at Bethany College, Lindsborg, Kan., where he worked his way through school for one year. At the end of that year he desired to enter the University of Minnesota, but his qualifications were not adequate because of lack of previous formal training. Therefore, he was required to take a special entrance examination. At that time he spoke German, Swedish, Danish, and Norwegian and was a good Latin student. On being admitted to the University of Minnesota, he borrowed from the Gilfilan Scholarship Fund and also worked on the University of Minnesota newspaper and the Minneapolis Daily. He served in the United States Army during World War 1.

At the University of Minnesota he received the degrees of bachelor of science, bachelor of medicine, and doctor of medicine—the latter in 1921. He immediately opened an office in the Besse Building in Minneapolis, for the practice of medicine.

While serving his internship, he became especially interested in venereal diseases and was made head of the Veneral Disease Clinic for Women at the Minneapolis General Hospital, which position he held from 1920 to 1925. In 1921 he also became consultant in venereal diseases with the Minnesota State Board of Control. The institutions under his supervision in

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venereal disease diagnosis and treatment were: Home School for Girls, Sauk Centre; state reformatories for men and women, St. Cloud and Shakopee; and the state penitentiary at Stillwater. He served in this capacity for twenty years, making regular trips to these institutions for which he was paid a small salary, but with no allowance for traveling.

On June 11, 1935, Dr. Arvidson married Mabelle Chatfield Miller. She has taught in the Minneapolis schools since 1928 and continuously contributed to his success. They have 1 daughter, now Mrs. Roger Miller of Memphis, Tenn.

On request of THE JOURNAL-LANCET editorial board, Dr. Arvidson prepared a paper entitled, "Experiences with venereal disease in Minnesota penal institutions," published in March 1938, in which he related the following experiences: While in charge of the Venereal Disease Clinic for Women at the Minneapolis General Hospital, a young girl who had recently been paroled from a girl's training school presented herself at the clinic with a letter from the social service department of the state board of health requesting continued treatment for syphilis which had been started in the training school. Dr. Arvidson was unable to find any evidence of syphilis by history or any phase of the examination including blood tests. She stated that she had had a lip sore which had healed in a week's time and before treatment had been instituted. A physician had made a diagnosis of a chancre of syphilis, but without examination except naked eye inspection of the sore, and then sent her to the institution. Dr. Arvidson refused to continue treatment without specific evidence to justify a diagnosis. Correspondence with the social service department demanding treatment ensued. However, Dr. Arvidson stood his ground that no treatment would be administered unless he had a diagnosis of syphilis based on specific evidence.

About the same time at the Minneapolis General Hospital Clinic he requested the arrest of a young clandestine prostitute because of delinquency in her treatment for syphilis. She was commited to the same training school for treatment. Six months later it was learned that although she was in the school no treatment whatsoever had been administered.

Before seeing these 2 cases, an elderly woman who had been out of medical practice for some time visited Dr. Arvidson's clinic at the hospital to learn something about the handling of venereal disease since she was to become an institutional physician. She was urged to work in the clinic, but after only a few visits she felt competent to treat venereal patients and, therefore, was put in charge of the medical work of the girls training school. Although on her arrival at the institution 90 girls were under treatment for syphilis, at the end of one month she reported that 50 had been cured. Arrangements were made to have an inspection made by the board of health. It was found that during the previous summer all antisyphilitic treatment had been held in abeyance because "the weather was too hot to treat syphilis." This physician was soon discharged and the superintendent invited Dr. Arvidson to accept the position, telling him that there were only 25 cases to treat and these were not severe. The following week when he arrived at the institution he found that instead of 25 girls, the small hospital was "literally mobbed with girls clamoring for attention." Dr. Arvidson conducted a survey which revealed that among the 325 inmates, 185 girls had active gonorrhea and 40 had syphilis. He later said, "Up to that time I thought that I was reasonably well acquainted with gonorrhea, but what I saw there was enough to strike horror in my soul—purulent, stinking discharges, cervical erosion, boils and eversions, secondary infections, and severe pelvic complications. I realized that with reference to venereal disease this institution was nothing less than a 'pest house'." He reported this situation to the director of the division of venereal disease, recommending that he arrange for a meeting with the state board of control. The board of health had regulations to the effect that syphilitic girls who had had enough treatment to assume noninfectiousness could be paroled, if arrangements were made for their continued treatment, but the gonorrheal cases were not to be paroled until pronounced cured.

Dr. Arvidson's recommendations to the board of control enraged the superintendent of the school who informed him that she was not going to have her school made into a venereal institution. He answered that it was already such. She then enlisted the aid of a board of women visitors. Concerning these visitors, Dr. Arvidson said: "These ladies probably meaning well, would come to the institution and question the girls as to my treatments, whether they were hurt by my examination, if they liked the treatment, etc." Thus, much opposition to the treatment of venereal diseases in that institution was engendered. "One girl who had shot and killed a man, refused to be examined and finally, in a rage, flew at me, clawing at my eyes. She was subdued and found to have syphilis, but after the examination she promised that if it took her to her dying day, she would take revenge." In later years, this girl came to Dr. Arvidson's private office, introduced her husband, and requested blood tests for both. As she left she sincerely thanked him for what he had done for her, including the protested examination for which she had threatened violence.

The board of women visitors continued their opposition for about a year. They registered complaints with the governor, the board of control, and the board of health in an effort to have venereal disease treatment stopped.

When the visiting board of ladies disbanded, families and friends of inmates began employing political pressure for release of certain inmates. A state official appeared at Dr. Arvidson's office seeking release of a daughter of one of his constituents. Not having the records available, Dr. Arvidson accepted his statement that the girl in question had syphilis but not gonorrhea. Therefore, her release was recommended. However, on his next visit to the institution, Dr. Arvidson procured the record and found that this girl had a most serious gonorrheal infection. He promptly notified the board of control and the release was nullified. Soon thereafter the official returned in a rage. Not being admitted immediately, he proceeded to kick the door bellowing to Dr. Arvidson's secretary that he was Mr. so-and-so, who had no time to wait for any underling of a doctor. Soon Dr. Arvidson received a letter from the chairman of the board of control in which he vividly stated his opinion of the whole affair and inquired how long it would actually take to cure a case of gonorrhea. He felt that this particular girl had been treated long enough. Dr. Arvidson replied and at the same time offered his resignation. However, he requested that before the resignation be accepted, the women members of the board visit the institution. In due time, the 2 ladies of the board came and I was stationed beside him at the examining table to see the actual cases. After seeing only a few patients she exclaimed, "Is it actually possible in civilized times that we could have anything like this in one of our own institutions!" She turned to Dr. Arvidson and said, "Don't resign. Forget any unpleasantness. This is the institution in which I am particularly interested and these conditions must be corrected. You shall have my support and whatever you need." Following this, Dr. Arvidson said, "What I had begged for, for eight months, supplies and moral support were obtained within a few days. As a result we managed to clean up the worst of the situation within a year's time." By 1938 the training school was, from a venereal disease standpoint, an ideal institution.

In 1934 a survey of venereal diseases of the larger Minnesota penal institutions was conducted to ascertain the incidence of venereal disease and improve prevalent methods of treatment. Dr. Arvidson examined every inmate beginning with the known cases of syphilis. Each one had a private interview with him. He made complete records of their cases, including the condition of each man. A copy was sent to the head of the institution to be incorporated in the general file, another copy sent to the venereal disease division of the state department of health in order to furnish information helpful in tracing contacts. During the previous biennium, there had been reported in the state prison 90 cases of syphilis and 2 cases of gonorrhea. However, Dr. Arvidson's survey disclosed a total of over 200 cases of syphilis, almost 14%. Among those who were in the institution at the beginning of the survey, one-half showed involvement of the central nervous system.

The gonorrhea survey disclosed 173 men, or nearly 12%, infected with this disease or its complications and not cured.

At the state reformatory for men, 44 cases of syphilis at the beginning of the survey and 77 new cases were admitted during the survey. He found almost 8% had gonorrhea, including both groups. No previous statistics on venereal disease were available at the reformatory.

In 1938 he wrote: "It is to be hoped that syphilis and gonorrhea will soon be relegated to their proper place among the rare group of diseases, among which we now number typhoid fever and diphtheria. The next great plague to go is syphilis."

Throughout the twenty years Dr. Arvidson did such marvelous work in the control of venereal diseases among the inmates of the state penal institutions, he also maintained a private general practice in Minneapolis. Throughout that period and thereafter, many fine people were referred to him who became his friends and lifelong patients.

With the advent of penicillin in the treatment of venereal diseases and knowing human nature as he did, Dr. Arvidson expressed great fear that upon learning these diseases could be treated successfully in a matter of days, people would lose their fear and dread of them to the extent that complacency would ultimately result in loss of much that had been gained in the control of these diseases.

In 1926 he joined the Swedish Hospital Medical Staff and remained a faithful and loyal member until his death forty years later. He became a member of the Hennepin County Medical Society, Minnesota State Medical Association and American Medical Association in 1923, and a life member in 1964.

In addition to his work as a physician, Dr. Arvidson contributed significantly to other worthwhile activities. He was instrumental in bringing Swedish people of distinction together. In 1921 he was one of the organizers of the Odin Male Chorus. He was one of 10 men who organized the Swedish Society in 1925. This was during the consulate of the Honorable Nils Leon Jensen. Dr. Victor Nilson was associated with him in the organization of the Swedish Society. This society was one of his great loves. For a number of years, Dr. Arvidson gave a cash prize of $150 to students of Swedish in Minneapolis high schools.

In 1926 he had the Order of Knighthood of Vasa First Class bestowed on him by the King of Sweden because of his outstanding work with the Swedish people. In 1936 he was a leading organizer of the Swedish Male Chorus.

In 1945 he and Dr. Helge Kokeritz did a year's work on a paper which was instrumental in obtaining a Swedish consulate for Minneapolis.

He was instrumental in obtaining the transfer of the building at 2600 Park Avenue from Mr. Swan Turnbladh for the American Swedish Institute. Dr. Arvidson was a prominent contributor to the preservation and perpetuation of Swedish culture, arts, and traditions in America.

He took much pride in serving as a gracious host to visitors of various categories, particularly those from his homeland. When Carl Sandberg was here as a guest of Swenskarnas Dag, Dr. and Mrs. Arvidson entertained him in their home. They entertained other members of the Swedish nobility, including the Count and Countess Bernodett. He was club master and past president of the Swedish Society and a life member and generous contributor to the American Institute for Swedish Arts, Literature, and Science. He was president of the Minneapolis and St. Paul Swedish Viking Athletic Association and chairman of the Twin City Stockholm Club. He was chairman of the Wings for Norway, helping to raise money for Camp Little Norway in Canada. He was active in Masonic bodies, particularly the hospitals built and supported for crippled children by the Shrine. His hobbies were music, antiques, and cruising on the Mississippi river. He first became interested in boating in 1945, and was very fond of his boat "Maja."

Few physicians living today knew Carl Arvidson longer than my acquaintance, which began when he entered the University of Minnesota School of Medicine in 1916. He was assigned to my teaching section in the department of anatomy. Therefore, I was in intimate contact with him throughout his freshman year. There a friendship developed which continued until his death fiftv years later. Through that half century, he demonstrated trustworthiness in every respect. It was a source of great pride to observe his accomplishments and the strong courage of his convictions. He was calm, quiet, and unassuming, causing no one trouble and helping everyone possible.

His life was full of loyalty and feelings for his fatherland, Sweden, and his adopted country, the United States of America, which offered him so much for which he reciprocated so abundantly. He died from emphysema and its complications on Dec. 12, 1965.

# *Book Reviews . . .*

## Stereotactic Methods and Their Applications in Disorders of the Motor System

*by* J. VAN MANEN, *243 pp., ill., Charles C Thomas, Springfield, Ill., 1967. $16.25*

This book represents an attempt to write a complete treatise on the subject of surgical treatments of patients with abnormal movements. In the introductory chapter the author reviews the historical aspects of the development of stereotaxis. The second chapter is a discussion of various stereotactic techniques. This is quite detailed and entirely adequate to permit one unsophisticated in the usage of these apparatuses to gain a fairly clear concept. The following chapter relates to methods of inducing subcortical lesions. There is a definitive study on the physical characteristics of heat application. It is believed that the assessment of the various methods presented offers an adequate understanding of the different methods used throughout the world. The next chapter relates to the anatomy, physiology, and pathology of the motor system. The material is first presented in a strictly anatomical manner and then presented according to the areas of the brain involved in the various clinical entities. There is considerable clinical neurophysiological-neuroanatomical related material presented. Again, the bibliography is adequate. The following chapter concerns the physical relationship between the basal ganglia and the various internal landmarks. This is not in sufficient detail to permit one to carry out accurate stereotaxis but does permit adequate understanding of the principles of the techniques. The last two chapters concern the stereotactic operations performed for Parkinsonism and for the hyperkinetic states. The author presents his material thoroughly, making an excellent assessment. His method of evaluation is certainly detailed, but at times rather hard to follow. However, if one is going to set up a program of stereotaxis, it would certainly be worthwhile not only reviewing his method of evaluation but also in using this book as a basic model of investigative design.

The book is done on a good grade of paper. The figures and charts are clear and concise. When one considers that this is a report of stereotaxis, written by an investigator from abroad, one can readily overlook the unusual phraseology and word usage that tends to creep in and, at times, make reading comparatively slow. All in all, it is believed that this is a valuable study and a contribution to neurological surgery.

LYLE A. FRENCH, M.D.
*Minneapolis*

## French's Index of Differential Diagnosis

*edited by* ARTHUR H. DOUTHWAITE, M.D., *9th ed., 1034 pp., ill., Williams & Wilkins Co., Baltimore, 1967. $24*

The ninth edition of this compendium is changed in several significant ways from the last previous edition published in 1960. The section headings and index now begin with the anatomical name of the symptomatic area. For example, "Pain in the Back" is replaced by "Back, Pain in." The text is now in double column pages. Another notable change is 250 new and replacement illustrations, many in color. There has also been considerable revision in the text. This book has always been well illustrated. Now it is outstanding in this regard. The index is comprehensive and easy to use.

A tome on differential diagnosis from symptoms and signs is a very useful device. The present edition has some real improvements over the last one. It is of great practical utility to medical men of any stage of training from medical student on. It can be used frequently by a generalist, an internist, and almost any other specialist.

EARL HILL, M.D.
*Minneapolis*

## NEW BOOKS RECEIVED

**Care of the Critically Ill**
by STEPHEN M. AYRES, M.D., and STANLEY GIANNELLI, JR., M.D., 256 pp., ill., Appleton-Century-Crofts, New York City, 1967. $8.50

**What is Allergy? A Guide for the Allergic Person**
by RAYMOND T. BENACK, M.D., 158 pp. Charles C Thomas Co., Springfield, Ill., 1967, $6.75

**Stereotactic Methods and their Applications in Disorders of the Motor System**
by J. VAN MANEN, M.D., 243 pp., ill., Charles C Thomas Co., Springfield, Ill., 1967. $16.25

**Peripheral Nerve Regeneration Using Nerve Grafts**
by LEONARD MARMOR, M.D., 107 pp., ill., Charles C Thomas Co., Springfield, Ill., 1967. $6.75

**The Madness in Sports: Psychosocial Observations on Sports**
by ARNOLD R. BEISSER, M.D., 241 pp., ill., Appleton-Century-Crofts, New York, 1967. $4.95

**Modern Trends in Radiotherapy 1**
edited by THOMAS J. DEELEY, M.B., and CONSTANCE A. P. WOOD, M.A., 382 pp., ill., Appleton-Century-Crofts, 1967. $16.50

**Modern Trends in Medical Virology 1**
edited by R. B. HEATH, M.D., and A. P. WATERSON, M.D., 231 pp., ill., Appleton-Century-Crofts, New York, 1967. $12.75

**Modern Trends in Rheumatology**
edited by ALAN G. S. HILL, M.C., 394 pp., ill., Appleton-Century-Crofts, 1967. $15.95

**Modern Trends in Neurology 4**
edited by DENIS WILLIAMS, M.D., 293 pp., ill., Appleton-Century-Crofts, New York, 1967. $13.75

**Modern Trends in Anesthesia 3: Aspects of Metabolism and Pulmonary Ventilation**
edited by FRANKIS T. EVANS, M.B., and T. CECIL GRAY, M.D., 294 pp., ill., Appleton-Century-Crofts, New York, 1967. $12.50

**Modern Trends in Endocrinology 3**
edited by H. GARDINER-HILL, M.D., 335 pp., ill., Appleton-Century-Crofts, New York, 1967. $16.50

**Ambroise Pare: Surgeon of the Renaissance**
by WALLACE B. HAMBY, M.D., 251 pp., ill., Warren H. Green, Inc., St. Louis, Mo., 1967. $9.50

**Learning Medical Terminology Step by Step**
by CLARA GENE YOUNG, and JAMES D. BARGER, M.D., 327 pp., ill., C. V. Mosby Co., St. Louis, 1967. $7.50

**Clinical Radioisotope Scanning**
by YEN WANG, M.D., 245 pp., ill., Charles C Thomas Co., Springfield, Ill., 1967. $12.50

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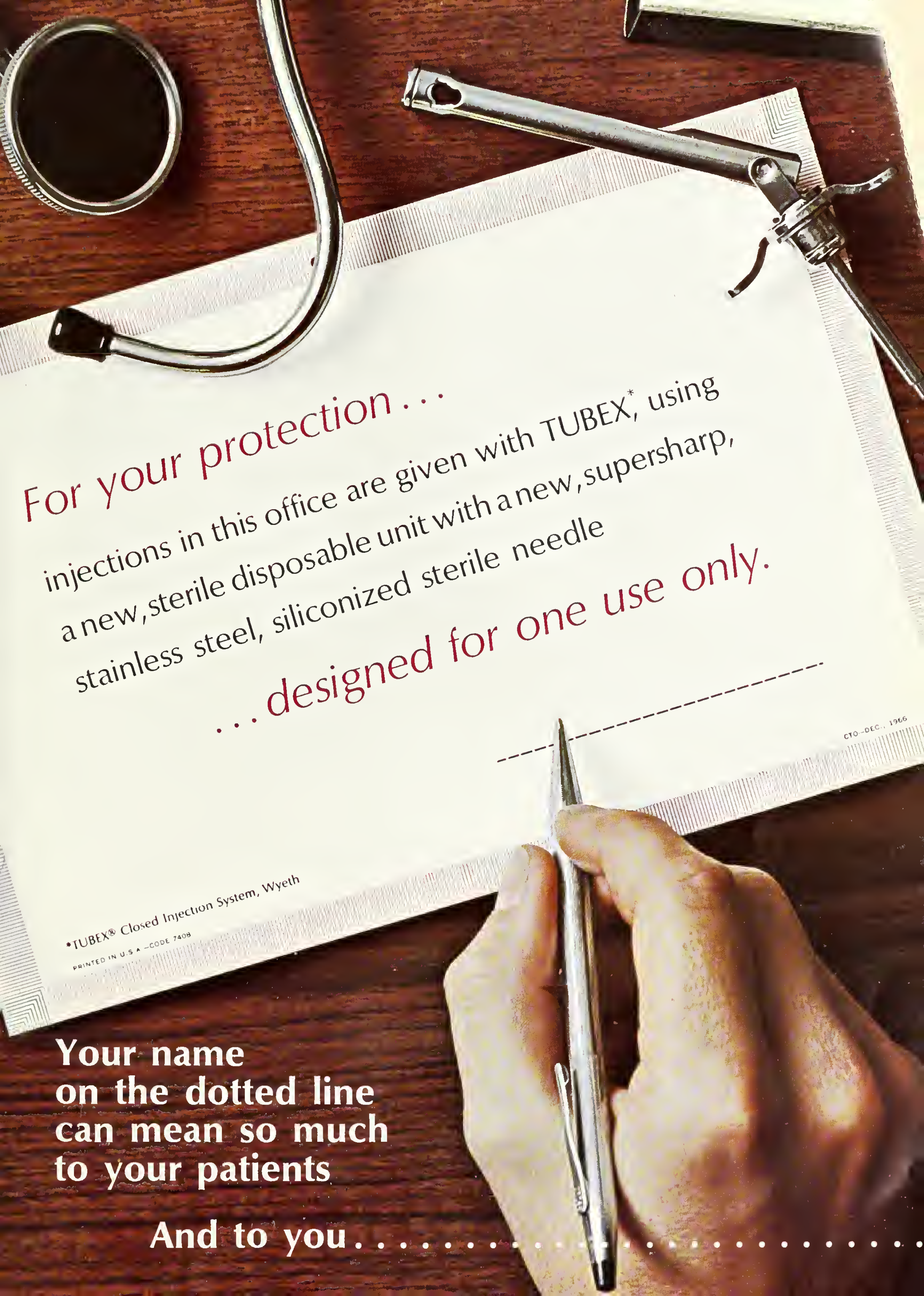

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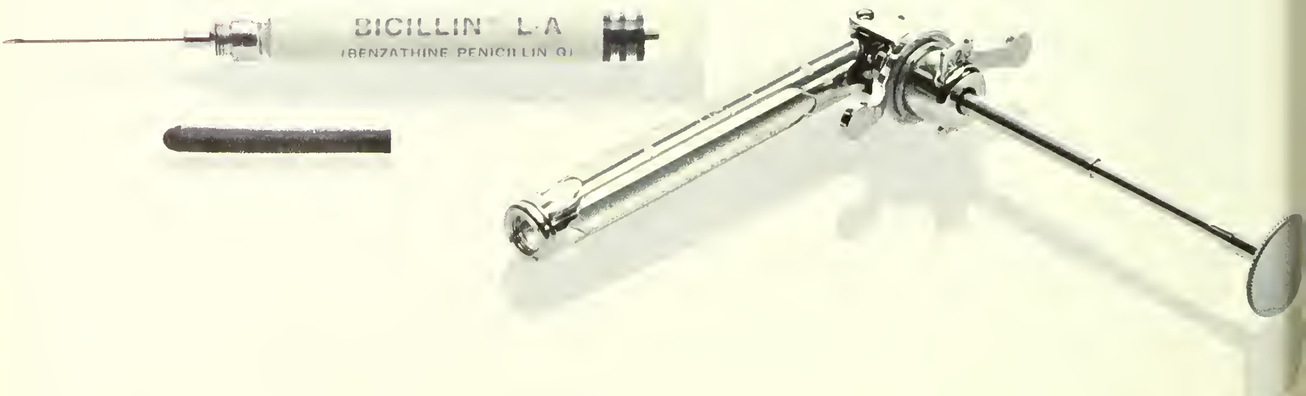

# *News Briefs . . .*

## North Dakota

OFFICERS of the North Dakota O.B.-Gyn. Society for 1968 are Drs. Rodney Clark, Grand Forks, president; Dean Strinden, Williston, vice-president; and George R. Thompson, Fargo, secretary-treasurer.

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DR. JOHN SAWCHUK of Rolette was elected to active membership in the American Academy of General Practice.

* * * *

DR. CHARLES B. WHEELER, JR., judge of the Western District of Jackson County in Kansas City, Mo., addressed the 11th annual Fall Clinical Conference in Bismarck on "What Happens to a Doctor in Court?" A board-certified pathologist, Dr. Wheeler received his medical and LL.B. degrees from the University of Kansas. His appearance was sponsored by the Bismarck Medical Foundation, a subsidiary of Quain and Ramstad Clinic.

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DR. MELVIN L. GUMM, formerly of Redding, Calif., joined the Quain and Ramstad Clinic, Bismarck. He is an ophthalmologist.

* * * *

DR. DAVID COVINGTON of the West Indies was expected to join Dr. M. S. Jacobson at the Elgin Clinic.

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DR. H. CHARLES WALKER of Devils Lake joined the staff of Mercy Hospital in Valley City as chief radiologist.

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DR. C. O. MC PHAIL of Crosby was honored for twenty-five years of medical service to the community.

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DR. SEBASTIAN CABOT of Spain was expected to join Dr. Michael J. Barnes at the Hankinson Clinic.

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DR. E. COLIN SMART arrived from Burton-On-Trent, England, to join the practice of Drs. Eoin Harvey and John Jamieson at Tioga Clinic.

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DR. FRANK MELTON of Fargo was elected president of the Minnesota Dermatologic Society. The organization has members from Minnesota, Manitoba, and states adjacent to Minnesota.

## Minnesota

REDUCING the risk of coronary and hypertensive disease will be the theme of the Minnesota Symposium on Prevention in Cardiology to be held May 2-3 at the Mayo Clinic, Rochester. The symposium is sponsored by the Minnesota Heart Association, the Mayo Foundation, and the University of Minnesota. Information is available from Dr. Henry Blackburn, Stadium Gate 27, University of Minnesota, Minneapolis 55455.

(Continued on page 18A)

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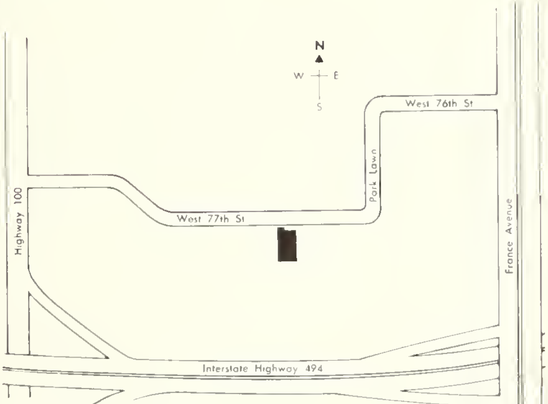

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## NEWS BRIEFS

(Continued from page 17A)

DR. CLARENCE EVERHART, formerly of Cleveland, Ohio, was named pathologist for Glenwood Hills Hospitals, Minneapolis.

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DR. ROBERT SCANLAN resigned from the Mayo Clinic, Rochester, to head the radiology department at Good Samaritan Hospital in Los Angeles.

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DR. JAMES PRIESTLY, senior surgeon of the Mayo Clinic, Rochester, received an honorary membership in the Royal College of Surgeons of England. The only other Minnesota surgeons to have been so honored were the late Drs. Charles H. and William J. Mayo and Donald C. Balfour and Dr. Charles W. Mayo, all of the Clinic.

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SPEAKERS at the 7th annual Milwaukee Medical Conference included Drs. Dwight McGoon and James Linman of the Mayo Clinic, Rochester.

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DR. ROBERT GOOD, professor of pediatrics and microbiology at the University of Minnesota, received the Gordon Wilson Medal and Lectureship of the American Clinical and Climatological Society for his outstanding contributions to medical science, particularly in the field of immunology.

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ELECTED FELLOWS of the American Academy of Pediatrics were 2 Olmstead Medical Group physicians, Drs. James Hartfield and Thomas Pyla.

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DR. DAVID UTZ of the Mayo Clinic, Rochester, was elected president of the Zumbro Valley Medical Society. Drs. Martin Van Herick and Robert Spencer, also of the clinic, were elected vice-president and secretary-treasurer, respectively.

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DR. DAVID W. GRANDE, a native of Virginia, opened a dermatology practice in Mankato after completing a three-year residency at the University of Minnesota.

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DR. DAVID W. FLORENCE of Golden Valley served the month of November at Avicenna Hospital, Kabul, Afghanistan, as a volunteer specialist with MEDICO, a medical service of CARE.

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DR. CHARLES G. SHEPPARD of Le Sueur, president of the Minnesota Medical Association, was named host for a delegation of state medical leaders that will make a twenty-one-day goodwill tour of Europe, starting April 10. The trip is sponsored by the Goodwill People-to-People Travel Program.

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DR. RAYMOND D. PRUITT, a native of Minnesota and former vice-president for medical affairs at Baylor University, Houston, Texas, became director of education of the Mayo Foundation and director of the Mayo Graduate School of Medicine at Rochester.

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FORMATION of a partnership by the 3 physicians in Winnebago was announced. Dr. John L. Mills has practiced in Winnebago for forty-seven years; Dr. Ralph S. Armstrong, twenty-one years; and Dr. Donald E. Halverson, twelve years.

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DR. JOHN P. KNOEDLER of Duluth was appointed to the State Board of Medical Examiners by Gov. Harold LeVander. Dr. Howard L. Horns of Minneapolis was reappointed to the board.

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DR. GEORGE LOGAN, since 1940 a staff member at the Mayo Clinic, Rochester, was installed as the 38th president of the American Academy of Pediatrics at Washington, D.C.

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**FREE PARKING**

**DR. EARL E. WALKER**, formerly an instructor in surgery at the University of Nebraska, joined the Medical Block Clinic at Red Wing.

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**DR. HILDEGARD K. GRABER** became the first woman medical director of Hastings State Hospital, succeeding Dr. Leo Grieben. A native of Germany, Dr. Graber had been assistant chief of the hospital medical staff.

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**DR. JOHN W. FODERICK** of Hastings resigned as Dakota County coroner because of the press of private medical practice. Dr. Herman J. Just, president of the Mississippi Valley Clinic, Inc., was appointed to the post.

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**DR. OWEN H. WANGENSTEEN**, retired head of the University of Minnesota department of surgery, received the Torch of Hope award from the City of Hope National Medical Center in Chicago.

* * * *

**DR. PAUL VANGERUD** left his practice in Wheaton to join the Valley City, N.D., Clinic.

* * * *

**HONORED** for unusual service by the American Academy of Ophthalmology and Otolaryngology were Drs. John Harris and Bourne Jerome of the University of Minnesota and Thomas P. Kearns and Theodore C. Martens of the Mayo Clinic, Rochester.

* * * *

**DR. NARCIS P. CABOT**, a native of Spain, joined the Watkins Clinic at Wells.

* * * *

**DR. JESSE E. EDWARDS**, director of laboratories at Charles T. Miller Hospital, St. Paul, was installed as president of the American Heart Association at San Francisco. A clinical professor of pathology at the University of Minnesota, Dr. Edwards is also chief pathologist and director of the research and training program in cardiovascular pathology at Miller Hospital.

* * * *

**DR. T. PAUL O'DONOVAN**, a native of Ireland, was appointed a consultant in internal medicine at the Mayo Clinic, Rochester.

* * * *

**DR. G. M. NEEDHAM** of Rochester was reelected president of the board of Rochester Methodist Hospital.

* * * *

**DR. HOWARD BURCHELL** took an early retirement from the Mayo Clinic, Rochester, where he had been a heart specialist since 1940, to accept a professorship of medicine at the University of Minnesota.

* * * *

**DR. DANIEL A. MAC DONALD**, still in active practice at 81, was elected honorary president of the medical staff of Lutheran Deaconess Hospital, Minneapolis. A member of the staff for fifty-six years, he was elected its first president in 1917.

(Continued on page 20A)

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1 Combes, F. C. and Canizares, O.: *New York State J. Med* 52 706-708 (Mar. 15) 1952.
2 Xander, G. W., *Western Med* 1 14 (Sept.) 1960.
3 Baker, A. G. *Penna Med J* 63:697-698 (May) 1960.
4 Lehrer, H. W., Lehrer, H. G., and Lehrer, D. R.: *Northwest Med* 75:1249-1252 (Nov.) 1955

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(Continued from page 19A)

## South Dakota

DR. ALDEN R. HEUPEL, a native of Ashley, N.D., and formerly an associate director of the Los Gatos-Saratoga Hospital of Los Gatos, Calif., became head resident pathologist of Watertown's 2 hospitals.

* * * *

DR. V. R. VONBURG of Mitchell was admitted to the International College of Surgeons.

* * * *

DR. ROBERT E. BORMES of Aberdeen has been included in the fourth edition of the Dictionary of International Biography, published in London, England. The dictionary, containing more than 10,000 biographical sketches, is a record of contemporary achievement distributed in 104 countries.

* * * *

DR. VICTOR J. SOUKUP, formerly chief of outpatient and admission service at the Veterans Administration facility in Danville, Ill., was appointed chief of staff of the V.A. Center in Sioux Falls.

* * * *

DR. R. NATARAJAN, a native of India, formerly in practice in Minot, N.D., opened an office in Rapid City.

## *Deaths . . .*

DR. RUSSELL H. FROST, 67, Edina, Minn., died Oct. 27. A specialist in tuberculosis and pulmonary diseases, he was a former superintendent and medical director of Glen Lake Sanatorium.

* * * *

DR. R. A. CURTIS, 60, Le Center, Minn., died Nov. 6. He had served Le Center as a family doctor for thirty-two years, and the community's business places were closed as a mark of respect during his funeral.

* * * *

DR. SAMUEL B. SHEA, 46, Minot, N.D., died in Rochester, Minn., Oct. 20. An otolaryngologist in Minot since 1952, Dr. Shea was a member of the American Board of Otolaryngologists and a past president of the Northwest District Medical Society.

* * * *

DR. MAUDE SLOCUMB FRENCH, 86, Minneapolis, Minn., died Nov. 8. A 1905 graduate of the University of Illinois medical school, Dr. French practiced medicine in Minneapolis from 1906 to 1959.

* * * *

DR. A. F. SETHER, 62, Ruthton, Minn., died Nov. 5. He had served the community of Ruthton and vicinity for the past thirty years, in recognition of which the people of the area had honored him in April at an open house.

* * * *

DR. S. B. FARRINGER, formerly of Parkers Prairie, Minn., died in Minneapolis, Nov. 20.

* * * *

DR. LOUIS M. ROSENBLADT, 59, formerly of St. Paul, Minn., died in Tacoma, Wash., Nov. 17. He was a surgeon at Northern Pacific Hospital in St. Paul from 1936 to 1946.

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*Based on 4 cc. per teaspoonful.

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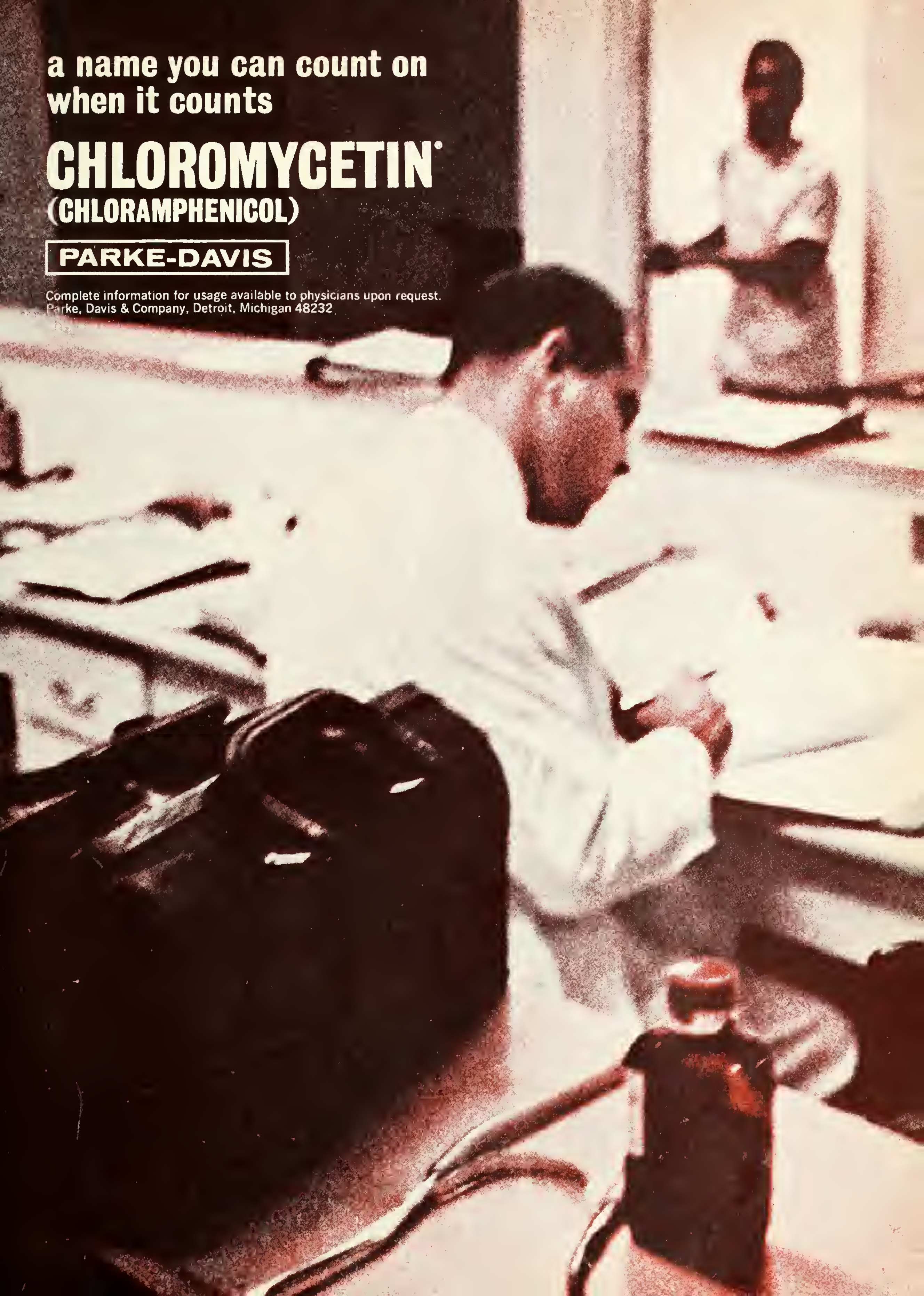

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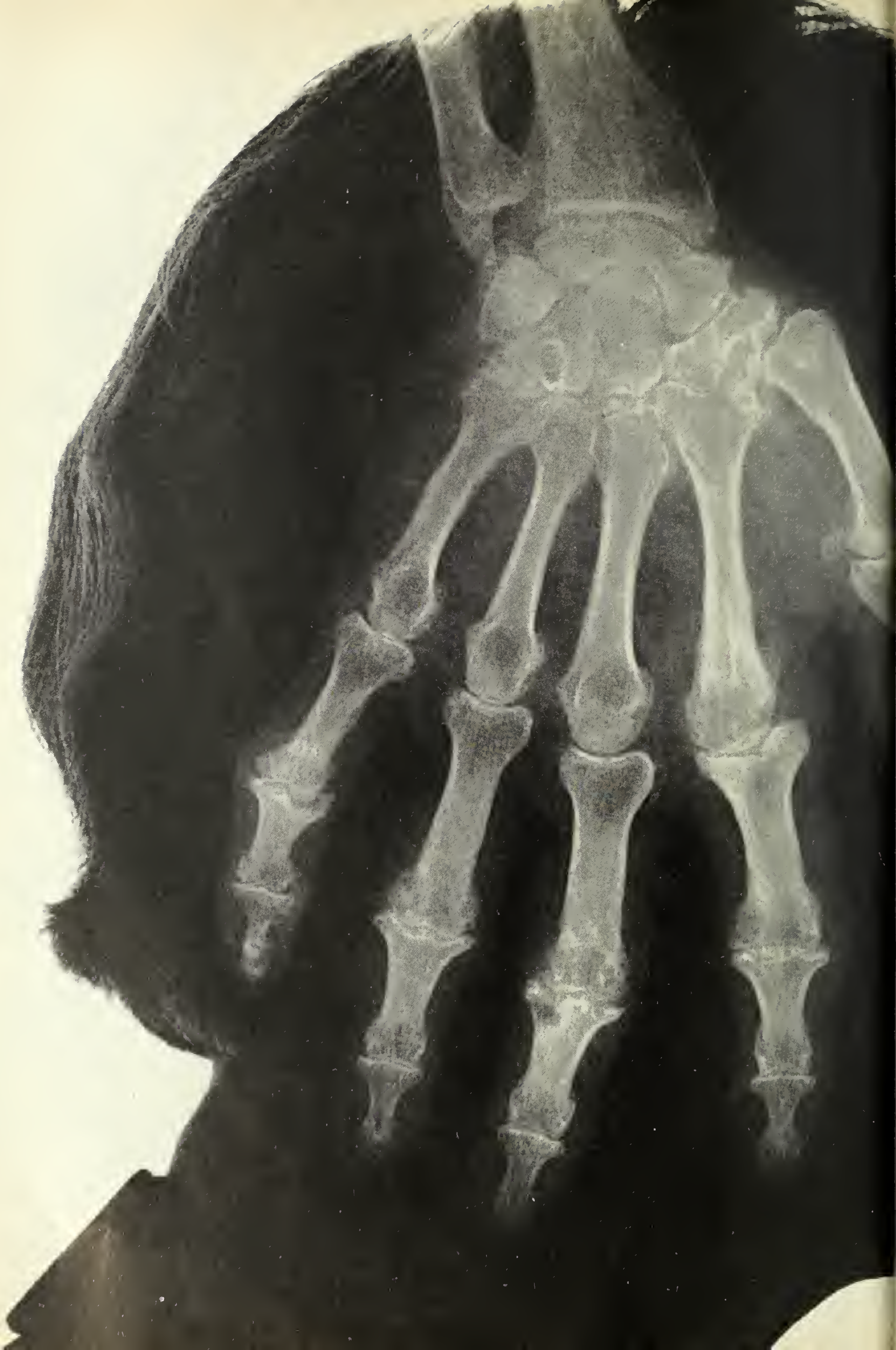

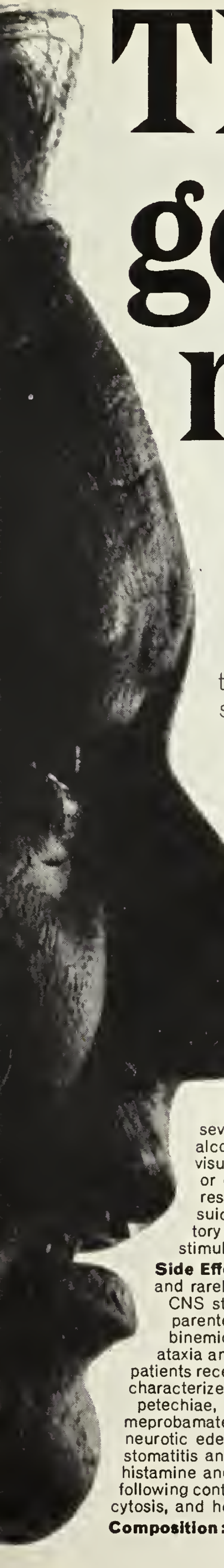

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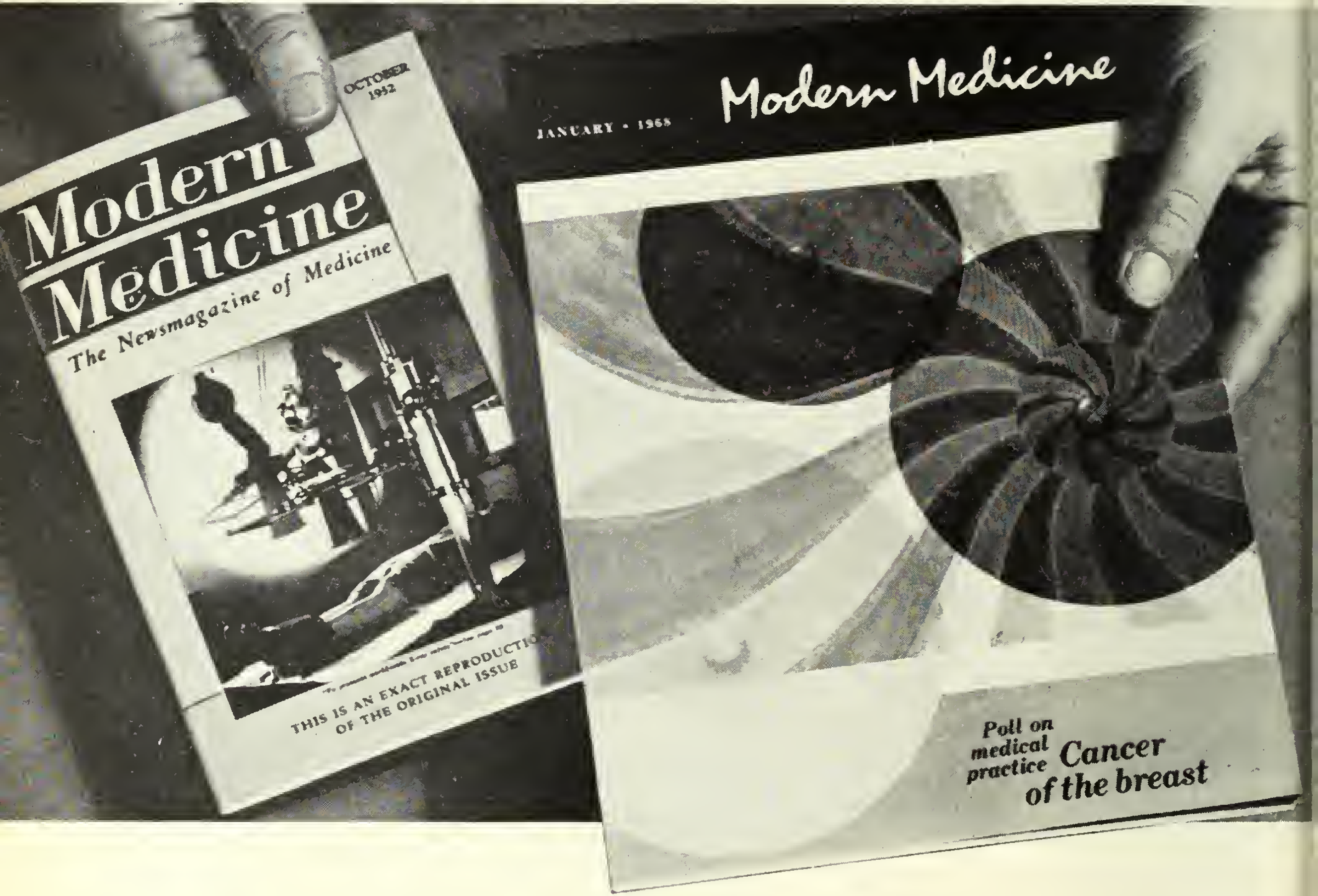

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this issue: the cold in pregnancy...

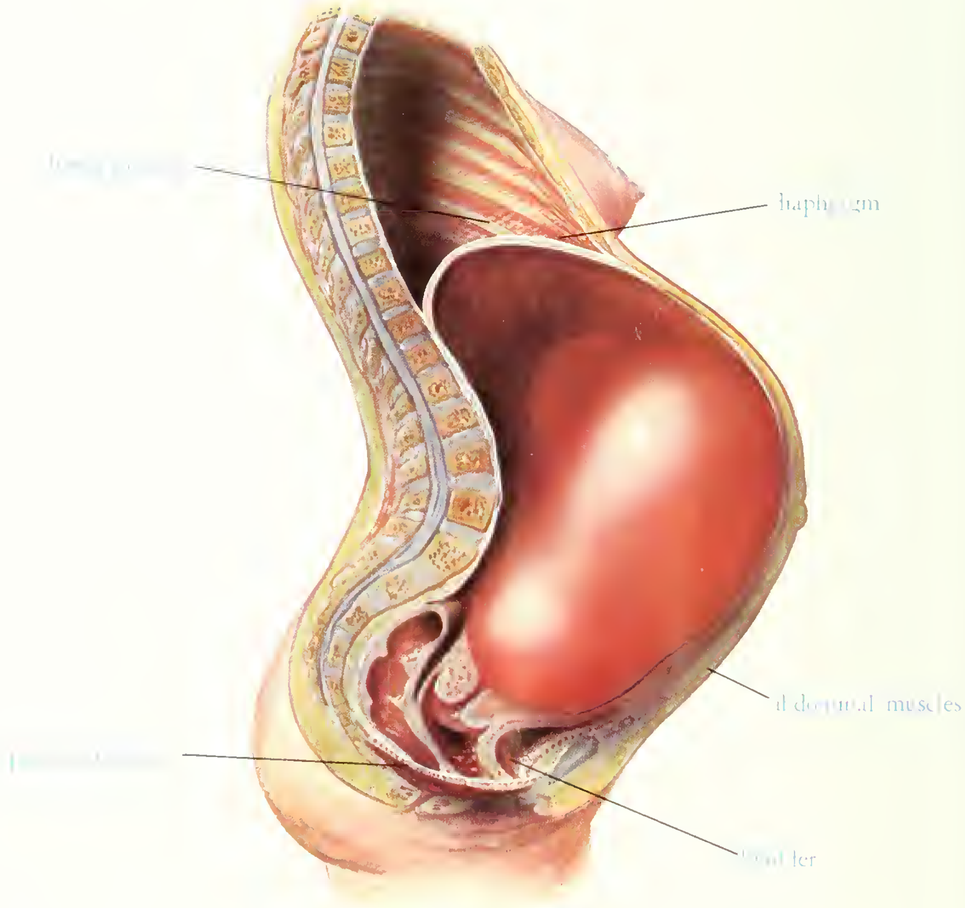
# the cold in pregnancy

Frederick W. Goodrich, Jr., M.D.
Senior Obstetrician and Gynecologist, Lawrence and Memorial Hospital, New London, Connecticut

Since pregnancy and the common cold are both ubiquitous, it is not surprising that they often occur at the same time in the same patient. Incidence figures are hard to come by, but the chances are very good that any given pregnant woman will have a cold at some time during the nine months of her gestation. When she does, she will tell you that it is the worst cold she ever had. It seems to last longer and the symptoms are more distressing than they are in the non-pregnant.

For purposes of this discussion, the common cold is considered to be the well-known symptom complex which includes sore throat, stuffy nose, and a cough. Febrile states or extension of the disease process into the lower respiratory tree are not part of the common cold and will not be included in this discussion.

The clinical picture of a cold in pregnancy can be confused by a long-known physiological phenome-



non. Kiesselbach's area in the nose (on the anterior part of the nasal septum above the intermaxillary bone) becomes engorged, apparently due to hyperemia induced by the increased estrogen level which accompanies pregnancy. The amount of congestion can vary in degree from woman to woman. Some have very little congestion, others will have occasional nosebleeds from this area, still others will have symptomatic congestion to the degree that they will complain of having a "chronic" or constant cold.

Less well recognized is the occurrence of this type of hyperemia in any part of the nasopharyngeal mucosa, again in varying degree. Such swelling often produces a postnasal drip which, the patient will state, is present only when she is pregnant. Patients who do not have symptomatic congestion ordinarily, will find that when they do get a cold, the symptoms last much longer than those of a cold usually do. Occasionally, this hyperemia is responsible for closure of the medial end of the Eustachian tube; such patients will complain of "plugging" of the ears. Inspection of the ear drum will show a depression which confirms the presence of Eustachian closure rather than wax in the canal which is the patient's diagnosis. Symptoms related to this physiological congestion are more apt to occur in heavier smokers or those who have a history of allergic rhinitis, just as are the symptoms of the common cold. And when the cold does occur in pregnancy, the symptoms are worse because of the underlying congestion.

The pregnant woman with a cold is miserable for other reasons, dependent somewhat on her parity and the length of her gestation. As parity increases, so also does the relaxation of the abdominal and perineal musculature. The uterus, lying against a slack abdominal wall, and bearing down on relaxed perineal muscles, acts like a piston when the patient coughs, sneezes, or even blows her nose, pushing down on the bladder. Stress incontinence during colds is almost the rule.

As the length of gestation increases, so does the size of the uterus. As it grows, it pushes the abdominal contents above it and elevates the diaphragm. This results eventually in a lateral displacement of the lower rib cage, often to a point at which the patient will complain of soreness in this area. If such a

*(Concluded on following page)*

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*(Advertisement)*

patient has a cold, the coughing and sneezing will exaggerate this soreness. The diaphragmatic restriction caused by the enlarging uterus also makes breathing more difficult, particularly when the patient lies down. A cold compounds this difficulty.

Treating a cold in pregnancy requires two additional considerations. The patient should be told that the symptoms may last longer lest she become discouraged, and she should be reassured that the treatment will not damage the fetus. Although there are still some women who seem blissfully ignorant regarding matters of health (and these need to be cautioned not to take medication recommended by friends), most of our maternity patients are aware of the thalidomide tragedy. These women need constant reassurance that the symptoms of a cold can be treated, and that the medication is safe. Fortunately, many of the drugs which are of benefit have been in use long enough and widely enough so that such a statement can be offered. Occasionally one encounters a patient who is so anxious to avoid medication that she is extremely reluctant to take anything at all. Since cold is self-limited, it seems reasonable enough to give such a patient the choice and not to force drugs on her if she is obviously afraid of taking them.

The most distressing symptom of the common cold is the nasal congestion. This can be mitigated by the use of a decongestant which will help reduce the postnasal drip and the coughing caused by it. The kind of a cough which is described as a "tickling" in the throat and which is apt to occur when the patient goes to bed is usually due to nasopharyngeal congestion rather than inflammation in the lower respiratory tract.

There are many cough mixtures available. Most contain an antihistamine, a decongestant, and a cough "suppressant." Should cough suppression be desirable, it is important to remember not to use both a decongestant tablet and such a cough mixture as the patient would be getting a double dose of the decongestant. With some patients, the placebo effect of a cough syrup may be important and a liquid preparation might be substituted for an oral tablet.

For a sore throat, candy drops or lozenges at frequent intervals are soothing. It is not only unnecessary but unwise to use antibiotic lozenges or drops. The use of antibiotics in an uncomplicated cold is contraindicated and should be scrupulously avoided.

In summary, a cold in pregnancy is more severe and longer lasting. The treatment of the symptoms with local and systemic decongestants will make the patient more comfortable.

Apparently the cold is so common in pregnancy that it has received very little attention in the literature. References are almost non-existent and the few which are available add little to the common knowledge, are out-dated, or are not helpful. Thus the usual bibliography is not appended.

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# Poverty, Illness, and the Child

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THIRTY YEARS AGO, Dr. William Welch of Johns Hopkins, in his presidential address to the American Medical Association, warned the membership that: "Medical science has infinitely more to give than the people actually receive." What he meant was that medical technology was far ahead of medical sociology.

There is no denying that, during the last twenty-five years, medical science has made brilliant advances. The pace grows swifter by the year, but regardless of the great technological strides unless these benefits reach every American child, they will not serve their humanitarian purpose. In our country, millions of children are denied basic health care; they do not have personal doctors, let alone access to pediatricians; their immunization is insufficient; and there is needless physical and mental neglect of children who will go through life with preventable handicaps.

The Children's Bureau and the U.S. Public Health Service have published evidence that poverty and ill health are the twin ravagers of children. They are notorious in their causal relationship. Poverty provides the soil in which malnutrition and unsanitary housing flourish; ill health by itself can create or intensify poverty.

If we define "poor" as a family of four with an annual income of less than $2,000 and then compare the health of the children with those of a family with an income of $4,000 or more, we find an embarrassing double standard of health services. Of the 35 million Americans who live on incomes insufficient to meet the daily basic needs, 6 million are children under 6 years of age and about 9 million are between 6 and 17 years.

As an extreme example, Mississippi, the poorest state in the union, has the highest infant mortality. In 1965, the average income per capita was $1,608, compared with the national average of $2,765. Thirty-seven percent of all nonwhite families and 10.5% of whites had annual incomes of less than $1,000. Fifty-six percent of nonwhites had incomes of less than $500. The infant mortality for whites was 23, while that for nonwhites was 53. Similar degradation in twelve other states—all southern—helps to explain the fact that the United States is eleventh in infant mortality in the world. This low rate is also weighted by the white poor, the American Mexicans, the Indians, the Puerto Ricans, and the migrant farmers.

When I visited England and the Scandinavian countries in 1965, I was asked frequently why the United States had such a high infant mortality in spite of the large sums of money spent for health. It was pointed out to me that, if the United States infant mortality were as low as that of Sweden and the Netherlands, with infant mortality rates of 14.2 and 14.4, respectively, the United States could have an annual increment of 40,000 babies. It has been estimated that, if present trends continue, the infant mortality will be about 9.4 in the Netherlands and 10.7 in Sweden in about ten years. In our country, it will remain about 22.

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One group of American children which is cruelly discriminated against is made up of the 500,000 children of migrant farm workers. After they reach age 9, these children are considered working hands which add to the meager earnings of their parents. Whole families travel in their jalopies and trucks to every part of the country to cultivate and harvest crops. In spite of the labor laws against exploitation of children —the laws which Senator Wagner spent a lifetime getting enacted—children continue to be exploited in 1967. About four years ago, at the time of a typhoid epidemic during the cherry-picking season in Wisconsin, I was shocked by the living conditions in company-owned barracks. Certainly, the damage to the lives of children living in such squalor is a national disgrace, not concordant with our acknowledged excellence in technology.

But all is not as black as I seem to have painted it. For along with the breakthrough of Medicare for the aged, the disadvantaged children also have had a breakthrough with the passage of the Social Security amendments in Title III, otherwise known as Head Start. In May 1967, Dr. Wedgewood, head of pediatrics at Washington University, was officially delegated by the joint departments of pediatrics of all medical schools and all pediatric societies to testify in behalf of new programs for child care, as designated in H.R. bill 5710. Undoubtedly, Congress will enact further legislation in behalf of the 11 million deprived children in this country.

Head Start, now in its third year, has appropriated $372 million for its 2,000 centers through the nation. Although it still has a long way to go, it already has brought diagnostic, curative, and preventive health services to more than 500,000 children who have been grossly neglected by their local communities. Its chief aim is to break into the vicious cycle of poverty by attacking the educational gap; improving the child's all-around performance; finding and correcting all existing physical, dental, and psychological disorders; and insuring the child's future health through adequate immunizations. The unreached child is to be offered the same quality of health service as those who can afford it. Head Start does not intend to replace the services of private doctors, as some have feared, or to duplicate existing resources. Data collected from Head Start centers confirm the need for these projects. For example, in one large center, it was found that 34% of the children had not seen a doctor in two years and only 1 in 4 had ever seen a dentist. More than 14% were not born in a hospital. About 50% had not received DPT, polio, and smallpox vaccines, and only 12% had received measles vaccine and a tuberculin test.

According to Dr. Evelyn Hartman, director of Head Start in Minneapolis, about 1,200 preschool children were enrolled from the poverty areas. One or more health problems were found in 63.7% of the children, and dental defects were the highest. Follow-up care has been completed in 319 children and will be continued for the other children unless the parents refuse care.

One of the most surprising and encouraging developments is the fact that many teachers, ministers, nurses, and other nonmedical workers have volunteered their services. I believe that Head Start has blazed a trail in showing local communities that there are large reservoirs of people—both lay and professional—with considerable talent who are ready and able to contribute their efforts.

It is, of course, too early to evaluate the ultimate benefits of the Head Start project. Data are being collected and analyses are being made by experts. The main problems to be overcome today are congressional inertia, wasteful planning, and, most of all, community apathy as well as complacency and indifference of the medical profession. Head Start is a good beginning, but we in this country have a long way to go before reaching our goal to insure every American child the same high quality care that each of our private patients receives.

# Causes of Confusion as to Meaning of Allergy to the Otolaryngologist: Part I

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There is much uncertainty as to the proper management of "allergy" in otolaryngologic conditions.[1] A great deal of the controversy in regard to this subject derives directly from a failure of the participants in the dialogues to define their terms.

Probably the most frequently undefined term is that of "allergy" itself. Some who recognize the presence of this bar to effective communication are, at the same time, aware of a difficulty in formulating a definition. These individuals have a tendency to state that their interest in the subject of "allergy" does not lie in theory and hypothesis but rather in "allergic" diagnostic techniques and "allergic" methods of relieving their patient's symptoms. They have, at best, a vague notion as to what they mean by what they say and they also neglect to state how a condition that is not clearly delineated can be effectively treated. They may talk as they will about the limitation of their interest to the pragmatic aspects of "allergy," but the fact remains that they are often confused as to their guidelines, techniques, and results. In communication with their fellows, misunderstandings between individuals who mean different things by the same word, with resultant mutual confusion, inevitably occur. Such failure of communication, in turn, prevents fruitful transfer of information and promotes skepticism as to the validity of old techniques, new concepts, or both.

As Rich stated,[2] "There is no clearer example of the confusion in thought and concept that can result from a lack of precision in terminology than that afforded by the literature dealing with hypersensitivity. As for the term 'allergy,' that word has become so debauched by indiscriminate usage that it would be fortunate indeed if it could be dropped completely from the vocabulary of science."

Randolph,[3] has made a similar statement and has suggested that the term "individual susceptibility" be substituted for that of "allergy" whenever an "ecologic" type of disease is meant.

The problem is real and has been almost unbelievably damaging to the professional reputation of the rhinologist because it has promoted failure in the area in which he comes into closest contact with specialists in other fields.

### THE DEFINITION OF "ALLERGY" FOR THE OTORHINOLARYNGOLOGIST

To understand what the definition of "allergy" should be for the present day rhinologist, it seems necessary to consider the definition as it was originally presented and the alterations in the definition that have been suggested during the ensuing sixty years. It has been stated that it should be possible to define a term in a maximum of 6 sentences, but it is patently absurd to attempt to apply this cliché to both the definition of the term "allergy" and the justification for the definition supplied.

The original meaning of the word "allergy," as defined by von Pirquet[4] on his introduction of the term, was a very broad one. Under this

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designation he included all alterations in the reactions of an organism to a second or subsequent exposure to a stressor in its external or internal environment. In his final book,[5] von Pirquet even included under the term "allergic" the changes of aging and those which allow the development of malignancy.

In the current terminology of Randolph this is stated as "Allergy represents a dysfunction of the fundamental mechanism of adaptation to the ecologic situation."

Rich wrote,[2] "It is obvious that if 'allergy' is defined as a term that includes not only all hypersensitivity reactions but also all immunity reactions, immunity becomes, by definition, an allergic phenomenon. It then becomes perfectly correct to say that 'immunity is the result of the allergic state.' This statement was made in this sense, by numerous authoritative writers on immunity and was quoted from book to book. With the passage of time, however, the term 'allergy' became so extensively used to mean only 'hypersensitivity' that the statement that 'immunity is achieved through allergy,' (for example, immunity is achieved through a state of altered reactivity), came to mean for most readers, 'immunity is achieved through hypersensitivity.' The meaning of the word 'immunity' was, likewise, greatly confused by careless usage, as a great amount of confusion and misinterpretation in the literature can be traced directly to the phrase, 'immune reaction.' This may be used by one writer to mean, simply, a state of altered reactivity of the body toward a foreign protein or bacterial substance, with no implication that the changed state of reactivity brings about a heightened resistance to injurious action or to infection. By another writer, however, this phrase will be used as connoting a state of resistance." Rich emphasized that the meaning intended by von Pirquet was that allergy covered all altered states of reactivity that follow involvement of the organism by environmental stress. Rich failed to mention, however, that von Pirquet believed that not only are both immunity and hypersensitivity achieved through allergy but also that, while these are usually parallel phenomena, they might not be otherwise related.

Possibly because most investigators of "allergy" were strongly oriented towards immunology, they apparently could not tolerate the subsidiary position assigned to immunology by von Pirquet. They stated that the term "allergy," as so defined, was so broad as to make it inadmissible for serious scientific discussion.[6] To prevent this term being applied to conditions, "whose only connecting thread was that they differed in some respect from the normal," they stated that any definition of "allergy" must contain the phrase, "the result of an antigen-antibody combination."[7] It is interesting to note that Rostenberg,[6,7] who was previously an enthusiastic adherent of the AG-AB union hypothesis, recently stated that more progress might be made in identifying the physiologic mechanism present in allergy if the investigators' vision were not muffled by a cloud of antibodies.

They also seized with avidity on the suggestion that hypersensitivity might be a phase of immunity rather than an autonomous parallel phenomenon, as von Pirquet had suggested it might be. When it proved difficult to explain how the same physiologic mechanism resulted in such a dichotomy of end results, it was suggested that, in some instances at least, hypersensitivity did, indeed, play a protective role; the increased destruction of tissue being, "a local sacrifice that must be paid for the protection of the organism as a whole."

Römer,[8] who was one of the chief early proponents of this hypothesis stated, "I am thoroughly aware that my experiments and observations provide no proof that hypersensitivity is the cause of the immunity. They demonstrate a frequent parallelism between hypersensitivity and immunity but they prove nothing about a causal connection between these states."

Rich,[2] who, with a series of collaborators examined this hypothesis critically, concluded, "There has never been placed on record one single experiment or clinical observation that demonstrated" that hypersensitivity is necessary for protection at any time, in any type, of any infection, under any condition whatsoever. He stated, "A study of the literature leaves little doubt that one of the factors that has led to the widespread acceptance of the view that hypersensitivity is a mechanism of immunity has been the ambigous use of the terms 'allergy' and 'immunity.'

It is surprising to learn on what a tenuous foundation Wright,[9] who takes a position opposite to that of Rich, bases his acceptance of the hypothesis that hypersensitivity is a function of immunity. It is also disappointing to find that none of the careful work of Rich and his collaborators is referred to.

Raffel[10] found it impossible to conclude whether or not hypersensitiviity and immunity are related in the same physiologic mechanism.

On consulting the index of *Immunological Diseases*, a symposium by an impressive group of authoritative writers on immunity and allergy, one is referred to the introductory article by

Alexander, "The History of Allergy," for a definition of the term. Alexander[11] wrote: "Allergy through usage came to be oriented to hypersensitivity, at first in a manner not clearly defined, but later it acquired a specific designation in that it is now the official term for hypersensitivity in standard medical indexes."

Since a reasonably careful search of this volume has failed to reveal a definition of "hypersensitivity," either referred to in the index or contained in any of its numerous chapters, this definition of one word by another, which itself remains undefined, leaves one with a dissatisfied skepticism as to the usefulness of the definition; it seems to be rather a dodging of the issue.

In *Clinical Aspects of Immunology* the editors state in the preface:[12] "Terminology has long bedevilled immunology, but the proper use of our existing vocabulary can do much to reduce the confusion. We have returned to the original use of the word allergy (or allergic) to describe the altered biological state and reactions of the tissues and serum to repeated exposure to antigens or allergens. Only in this way, it seems to us, can inconsistency and confusion be avoided. 'Hypersensitive' and 'immune' are used as descriptive of the clinical state only, and do not necessarily indicate different underlying mechanisms." It would seem, however, that in their final phrase they have altered von Pirquet's concept, if only slightly. They might better have said, "and may be parallel but not necessarily associated phenomena." The division of terms into those applicable to the biological state and those applicable to the clinical state seems to be a definite step toward the clarification of the meanings of these words as used in relation to allergy.

From this scanning of the literature it would seem best to define allergy as von Pirquet did and Gell and Coombs presently do as "All alterations in the reactions of an organism to a second or subsequent exposure to a stressor in its external or internal environment."

### THE HYPOTHESIS OF ANTIGEN-ANTIBODY UNION AS THE CAUSE OF THE CLINICAL STATE OF HYPERSENSITIVITY

A great deal of the confusion of the rhinologist in regard to clinical hypersensitivity cannot be understood without consideration of the effect on "allergists" of the hypothesis of AG-AB union as its physiologic mechanism and as the precipitating cause or trigger of the reaction of hypersensitivity. This hypothesis does not seem to have been ever formally stated or proposed but slowly evolved from the concept of antitoxin, and it is likely that AG-AB union was adopted as a working hypothesis without the slightest thought being given to the alternative proposed by von Pirquet. It is also true that before 1900 immunology was more nearly a strictly serologic discipline and had little of the close association with biochemistry that has now developed. It is an unfortunate fact, however, that in the approximately half century that has passed since the emergence of this hypothesis, it has proved inadequate to explain satisfactorily either the mechanism of hypersensitization or that of hyposensitization.

Indeed, except in the case of bacteria producing exotoxins, immunity to bacterial invasion cannot be adequately explained on this basis either. Hall[13] found that in Malta fever, for example, the defensive action of antibodies appeared to be an accidental occurrence which at times can be predicted but which very often is unpredictable.

Metchnikoff[14] and his followers pointed out the major role which the formed elements of the blood and the macrophages of the ground substance play in protecting the organism against injury from the breakdown products of bacteria, bacteria themselves and foreign proteins, polypeptides, and polysaccharides.

Dougherty[15,16] has pointed out that most of the cells of the ground substance, including even the fibroblasts, are capable of phagocytosis and digestion and that changes in the hydration of the hyaluronate-mucopolysaccharides of the ground substance influence the ease with which bacteria and other substances traverse this apparently homogenous, gelatinous, amorphous substance. These appear to be biochemical phenomena of resistance and are not related to antibody formation. The reactions of the ground substance and its cells constitute the first line of defense. It is only when this local defense is breached and the invading material gains access to the blood to be distributed to all the cells of the body that antibodies are formed or specific immunity produced. Injury of any sort is the stimulus that starts a wave of cellular reaction which is called inflammation. The adjacent cells of the ground substance engulf and degrade the invading material by means of lysozymes contained in the lipoid membrane sacs of the lysosomes. If these lipoid membranes are defective, either from genetic predetermination, fatigue, or biochemical insufficiency, the lytic enzymes may escape into the cytoplasm and destroy the integrity of the cell by releasing these enzymes which may then be phagocytized by a neighboring cell by a process of pinocytosis. In this way the cellular injury tends to spread by a chain reaction until arrested by cells capable of metabolizing both the initial stimulus and the lytic enzymes released by neighboring injured cells. If the invasion is terminated by this local mechanism nothing further happens. If, however, the stimulating substance or the detritus of the battle reach the bloodstream and the cells of the body generally, antibodies are formed which combine with exotoxins and confer protection against its damage or attach themselves to nontoxic protein particles to form macromolecules which can be engulfed and metabolized by phagocytic cells. This is the normal adaptation mechanism by which at least some substances, which the body identifies as not-self, are eliminated. It is suggested that it is a defect of the catabolic part of that mechanism which leads to the development of hypersensitivity, which is not derived directly from antigen-antibody union.

Although Rich[2] tentatively accepted the hypothesis of antigen-antibody union as the primary precipitating event or trigger in the reaction of hypersensitivity, he advised that caution be used in assuming that because the immune mechanism is associated with the formation of antibodies and antigen-antibody union is a factor in immunity, that hypersensitization is also so associated. This warning is echoed by Coombs and Gell[17] in discussing their classification of allergic reactions. They state, "Finally, caution is required . . . since the demonstration of an immunological event, such as antibody production . . . may not be at all related to the actual etiology of the disease under study."

These warnings seem to apply particularly to delayed (bacterial) type allergy. Miles[18] stated, "There is a class of in vivo reactions, of which hypersensitivity to tuberculin is an example, that have proved to be independent of overt antibody, though as regards to both the induction of the hypersensitive state and the eliciting of the reaction by antigens, they display all the specificity of antibody-dependent defects."

It is, of course, true that Lawrence[19] demonstrated that delayed hypersensitivity could be transferred by immunologically competent cells, and later a transfer factor could be extracted from such cells by which hypersensitivity could be transferred. This substance has not been further identified, but whatever it is it is not antibody.[18]

Pappenheimer, Scharf, and Uhr[20] suggested that antibody production might be a 2-step process. The first phase is that of delayed hypersensitivity; the second that of antibody formation. This hypothesis can explain why delayed and immediate hypersensitivities occur together so frequently, but to a varying degree, in the same patient and to the same allergen. It fails to explain, however, why, although common antibodies are produced against polysaccharides, delayed allergy to this type of chemical has never been convincingly demonstrated.

Eisen[20A] remarked that the facination which the delayed types of hypersensitivity reactions hold for many immunologists lies in the implication that underlying such reaction is an, as yet, undiscovered system of antibody-like substances which are cell-associated and significantly different from serum antibodies. He stated however, "but in all the experimental data which at present support this implication there exist enough ambiguities to furnish skeptics with plenty of ammunition."

Thus it would appear that though the immunologist has struggled manfully to find adequate suppport for the working hypothesis of AG-AB union as the immediate cause or trigger of the reaction of hypersensitivity, his efforts—extending over more than fifty years—have been crowned with disappointment. In instances such as this it has usually been "the method of science" to entertain an alternate hypothesis.

Manwaring[21] suggested in 1913 that the development of hypersensitivity might result from a defect in the metabolism (catabolism) of the antigenic molecule in phagocitizing cells.

In 1953 Godlowski[22] proposed the *Enzymatic Theory of Anaphylaxis and Allergy* which he stated is, "a primary abnormality of protein metabolism." In this volume he embraced one of the hypotheses originally suggested by von Pirquet—that the development of immunity and hypersensitivity may be parallel phenomena, initiated by the same stimulus, but autonomous and not otherwise related, and not interfering with one another. This suggestion was ignored by immunology because at that time its whole energy was being expended on attempts to validate the AG-AB union hypothesis.

Campbell and Garvey[23] stated recently, "It is evident that antigenic material may persist for many months or even years after entering cells. Although the material exists as a degraded fragment of the original protein molecule, this breakdown into a size about that of an antigenic determinant may be quite significant and one of the factors involved in the immunogenicity of foreign material. Since the fragment is associated with soluble ribonucleic acid, one can speculate that the foreign fragment acts in a specific manner to modify the function of SRNA in the biosynthesis of protein." They made the further suggestion that an antigenic fragment might so modify an RNA molecule associated with the mitochondria that a slight change in a polypeptide chain would result. Such change might substantially alter the function of the protein molecule produced. If this molecule was a proteolytic enzyme this might result in only partial intracellular digestion of an engulfed antigenic molecule. They suggested that this might stimulate the cell to produce antibody. The cell could then be considered hypersensitized. The antibody would remain intracellular until a further influx of antigenic material produced intracellular AG-AB union with injury to the cell. This would release toxic metabolites to produce anaphylactic shock or antibodies which would then circulate in the blood, or both.

Campbell and Garvey point out that this is a highly speculative hypothesis and though the intracellular breakdown of antigenic material is well established, many questions can be answered only after the mechanism of protein synthesis and molecular replication is better understood. It does lend support, however, to the hypothesis that hypersensitivity results from a defect in intracellular catabolism.

Godlowski[24] in 1962 published an elaboration of his previous concept of intracellular enzymatic dysfunction. "This book is a continuation of the same concept which in view of more basic facts . . . is a 'mechanism of allergy.' " He stated: "The theoretical approach of the first monograph has now been supported by positive experimenal facts and practical results obtained in cases of clinical allergies." In a second volume published in 1965 he presented the "practical application of the principles of the enzymatic mechanism of hypersensitivity reactions to clinical medicine."

Godlowski's concept of the mechanism of hypersensitization is stated as follows: "If antigenic molecules, of whatever biochemical nature, penetrate a cell they represent a substrate which is attacked by the intracellular enzymes in order to eliminate a foreign element which endangers the biological equilibrium of the cell. Anaphylactic hypersensitivity results from an abnormal enzymatic response within the target cells to the invasion of a new substrate, which may be called "antigen." This is an "adapted" enzyme having only a limited power of proteolysis. On activation, this newly induced enzymatic system yields a variety of toxic metabolites which are responsible for the several types of hypersensitivity reactions. The antigen may also stimulate the production of antibodies from immunologically competent cells which may be a factor in the immune response. The 2 physiologic mechanisms are quite separate, however, though they may run a parallel course and have a linear relationship, although not necessarily so.

In discussing delayed type hypersensitivity, Lawrence[19] also expressed the opinion that this probably represented some sort of metabolic defect. Ishizaka believed that the evidence indicated that the "site of antigen-antibody union" must be intracellular.

Although the hypothesis of Godlowski is also of the imaginative variety there seems to be as good, if not better, reason for assuming that hypersensitization is a metabolic defect than the equally imaginative assumption that it results from a normal immune mechanism. It is obvious that this latter hypothesis has resulted in "no progress" in the development of a construct by which the mechanism of the production of the hypersensitive state, that of the reaction of hypersensitivity, or the mechanism of hyposensitization can be explained. It appears that the differences in the hypotheses presented by Campbell and Garvey and by Godlowski are largely semantic and of minor degree. Kailin and Hastings have[25] suggested that a defect in the lipoid membranes of the lysozyme system, described by Weissman,[26] might interfere with the catabolic leg of the immune mechanism, thereby producing a pathophysiologic phenomenon that might conceivably derive from predisposition, fatigue and exhaustion of a normal lysozyme system, or from both factors acting in concert.

The hypothesis that allergic hypersensitivity is the result of a metabolic defect in intracellular enzymes certainly offers a less confusing theoretical scaffolding on which many phenomena, unexplained by the presently popular AG-AB union hypothesis, can be logically displayed. As Miles[18] said in regard to the auto-allergic hypothesis of atopy, it removes antibody from the predominant position it has held in immunology.

If the rhinologist adopts the theory that hypersensitivity is not causally related to immunity and antibodies are not involved in its production, by simplifying his outlook it will allow him to avoid another frequent cause of misunderstanding and confusion.

FIRST SECTION

*Part II and Part III with references will appear in subsequent issues.*

OWEN H. WANGENSTEEN *Series*

# Postoperative Renal Failure

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ACUTE POSTOPERATIVE ANURIC renal failure is most frequently a sequela of low cardiac output as manifested by hypotension, hemolytic blood transfusions, septicemia, or other identifiable etiologic factors. The high mortality rate of postoperative renal failure is attributable predominantly to unresolved underlying disease states rather than to the complications of renal failure per se. Thus, patient survival is dependent upon effective treatment of both renal failure and concomitant preexisting disease states that may be either directly responsible for the renal failure or prejudicial against survival or both.

### CLINICAL MATERIAL

Tables 1 and 2 summarize the experience of the University of Minnesota Hospitals with acute postoperative renal failure from 1950 through 1964. The overall mortality rate for patients experiencing postoperative renal failure was 80%. This high mortality rate is attributable to three factors: renal failure, associated operative trauma, and severe underlying disease states. In contrast, during this same period, the mortality rates for patients with acute anuric renal failure secondary to hemolytic transfusion reactions and postpartum hypovolemic hypotension were 28% (6 of 22) and 31% (4 of 13), respectively. This demonstrates the lower mortality rate of renal failure occurring in otherwise healthy patients with minimal or no operative trauma.

The existence of anuria in our studies was defined as a daily urinary output of less than 200 cc. in adults and proportionately smaller volumes in children. Patients with anuria secondary to agonal circulatory collapse have not been included in this series.

In approximately 90% of the patients with renal failure complicating general surgical procedures, the renal failure occurred as the result of decreased renal perfusion secondary to prolonged preoperative or postoperative hypotension or to postoperative septicemia. In approximately 90% of the cases of renal failure after open heart surgery, the renal failure was attributable to operative or postoperative hypotension, low cardiac output, or intractable congestive heart failure. In most of the general surgical patients, major postoperative complications—for example, anastomotic disruptions, cholangitis, peritonitis, pneumonia, and wound disruptions—decreased chances of survival. These complications were in part sequelae of renal failure since anurics have a propensity to develop septic processes, anemia, bleeding tendencies, delayed wound healing, and negative nitrogen balance. The majority of patients suffering from renal failure after open heart surgery failed to receive satisfactory hemodynamic corrections and, thus, survival was unlikely, even in the absence of renal failure. Fifty percent of these patients died of cardiac complications.

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### TABLE 1

### CLINICAL MATERIAL ON POSTOPERATIVE RENAL FAILURE

| *Operation* | *No. of patients* | *No. of deaths* | *Mortality percent* |
|---|---|---|---|
| Thoracic procedures | 4 | 3 | 75 |
| Open heart surgery | 50 | 40 | 80 |
| Abdominal procedures | 36 | 33 | 92 |
| Vascular* procedures | 17 | 12 | 71 |
| Transurethral resection | 7 | 3 | 43 |
| *Totals* | 114 | 91 | 80 |

*Operations upon the abdominal aorta for aneurysms and for occlusive disease

### TABLE 2

### CAUSES OF DEATH

| | | |
|---|---|---|
| *Sepsis* | | 47 |
| Septicemia | 27 | |
| Pneumonia | 10 | |
| Peritonitis | 10 | |
| *Cardiac* | | 18 |
| Myocardial infarction | 5 | |
| Intractable congestive heart failure | 6 | |
| Miscellaneous | 7 | |
| *Hyperkalemia* | | 3 |
| *Miscellaneous* | | 8 |
| *Pulmonary* | | 15 |
| Emboli | 6 | |
| Aspiration | 5 | |
| Airway obstruction | 2 | |
| Miscellaneous | 2 | |
| *Total* | | 91 |

## DISCUSSION

*Diagnosis.* Transient postoperative oliguria, secondary to hypovolemia, dehydration, or an increased antidiuretic hormone secretion, commonly occurs in patients with normal renal function. Such oliguria does not approach anuric volumes. In most cases, impending anuria is heralded by postoperative oliguria that progresses to anuria within twenty-four to forty-eight hours. This decrease in urinary output is usually associated with hypotension, sepsis, low cardiac output, or other recognizable conditions that may be implicated in the production of renal failure.

The characteristic findings of acute renal failure are anuria, a low urinary specific gravity, low urinary urea to blood urea ratio (less than 5), increased urinary sodium excretion (40 to 90 mEq. per liter), and a urinary osmolarity (350 to 500 milliosmoles per liter) that is only slightly above that of plasma (280 to 310 milliosmoles per liter). Despite the low urine volume, the specific gravity of the urine in acute renal failure is low and fixed between 1.008 and 1.010. Mannitol and other osmotic diuretics given before, or at the onset of oliguria, result in misleadingly high urinary specific gravities and osmolarities. In contrast, prolonged preoperative parenteral fluid administration with protein restriction results in a low urinary specific gravity secondary to decreased solute excretion in patients with transient postoperative oliguria. Since urea is the major determinant of urinary osmolarity, a decreased urinary osmolarity is a reflection of decreased urine urea concentration. Normally, in the absence of a salt load, the urine contains very little sodium, whereas in acute renal failure the urinary sodium content is between 40 and 90 mEq. per liter. Confirmation of the refractory character of oliguria in doubtful cases of acute renal failure is best determined by challenging the patient with an infusion of 500 to 1,000 cc. of 5% dextrose in water given over thirty to sixty minutes. Failure of the patient to respond to this water load by diuresis confirms the diagnosis of acute renal failure.

*Etiology.* Once renal failure has been diagnosed, a careful search should be made to determine its etiology. It is of particular importance to identify remediable causes of renal failure, such as ureteral obstruction, renal artery obstruction (emboli and thrombosis), and renal vein thrombosis. The causes of ureteral obstruction in this series included unintentional ureteral ligation, ureteral kinking or compression secondary to retroperitoneal hematomas, and ureteral obstruction secondary to renal calculi. Since retrograde pyelography in itself may cause acute renal failure and because renal failure secondary to ureteral obstruction can be excluded by the demonstration of one patent excretory system, unilateral retrograde pyelography is performed to rule out ureteral obstruction. Bilateral renal artery obstruction is best demonstrated by aortography. Aortography is indicated in cases of surgical manipulation of the kidneys, the abdominal aorta, and its major branches and in patients with atrial fibrillation, especially if there are other signs of embolic phenomena. An inferior vena cava venogram may be helpful in demonstrating renal vein thrombosis and is indicated after surgical manipulation of the kidneys and in postoperative patients with evidence of pulmonary emboli.

A careful review of the medications given is necessary to exclude nephrotoxic anuria, since the continued use of an offending nephrotoxin precludes return of renal function. In the postoperative period, the most frequent offending nephrotoxins are the various antibacterial agents and pressor agents. Postoperative anuria may also result from the preoperative use of oral cholecystographic media.

### CLINICAL COURSE

There are two distinct phases of acute renal failure: anuria and diuresis. Although anuria may persist as long as forty days, spontaneous diuresis usually occurs between seven and fourteen days. Renal function gradually improves during the diuretic phase, and the kidneys are able to maintain body homeostasis seven to ten days after the onset of diuresis.

### TREATMENT

The treatment of patients with postoperative renal failure is exacting since their postoperative management, already made complex by the complications responsible for renal shutdown, must be further altered to conform to the established treatment principles of acute renal failure. A brief summary of these principles will be presented, but the readers are referred to a number of excellent reviews on this subject for more detailed presentation.[1–3]

TABLE 3

MAJOR COMPLICATIONS OF ACUTE UREMIA

*Fluid and electrolyte*
- Hyperkalemia
- Hypokalemia
- Metabolic acidosis
- Overhydration
- Hyponatremia
- Hypocalcemia
- Hyperphosphatemia

*Pulmonary*
- Pneumonia
- Pulmonary edema
- Respiratory depression

*Cardiac*
- Congestive heart failure
- Digitalis intoxication

*Gastrointestinal*
- Peptic ulceration
- Ileus
- Nausea
- Vomiting
- Anorexia

*Central nervous system*
- Convulsions

*Miscellaneous*
- Hemorrhagic diatheses
- *Anemia
- Negative nitrogen balance
- *Delayed wound healing
- *Sepsis

*Except for anemia, delayed wound healing, and sepsis, all the complications associated with acute renal failure may be either prevented or minimized by proper management and the use of early dialysis.

The key to successful management of acute renal failure is the use of early dialysis—maintenance of the blood urea nitrogen below 150 mg. percent. This is exemplified by our experience: The adoption in 1961 of a program of early dialysis in all cases of acute anuric renal failure resulted over the next four years in a 26% decrease (77% vs. 51%) in the mortality rate for those patients undergoing dialytic therapy.[4] Since the incidence of complications and consequently the mortality rate of acute renal failure is, in general, directly proportional to the severity of the uremia, most centers now dialyze patients as often as is necessary to keep their BUN below 100 mg. percent. The complications of acute uremia are listed in Table 3. This list emphasizes our point that proper clinical management and the early use of dialytic therapy will preclude all of the complications of renal failure except sepsis, anemia, and delayed healing. With proper management, death from fluid or electrolyte imbalance should not occur. The anemia associated with renal failure is usually not severe and, therefore, seldom contributes to the patient's death. Several reviews have demonstrated that both sepsis and delayed wound healing are better controlled with the use of early dialysis. However, sepsis remains the principal cause of death in acute renal failure, and delayed wound healing is a major source of the increased morbidity and mortality of renal failure in the postoperative patient. Bleeding associated with acute renal failure is poorly understood but is generally minimal when the uremia is well controlled.

Except for limitations discussed below, either peritoneal dialysis or hemodialysis may be used. Peritoneal dialysis has an advantage in that it may be performed in hospitals without artificial kidneys. There are, however, two major limitations to the use of peritoneal dialysis. The first limitation is loculation of dialytic fluid within the retroperitoneal cavity. In approximately 7% of patients, incomplete withdrawal of dialytic fluid results in severe unintentional body fluid alterations. This complication most often occurs in patients with previous intra-abdominal sepsis or multiple intra-abdominal procedures. A second limitation is chemical or bacterial peritonitis (5 to 10% of patients). These two complications disallow continued use of peritoneal dialysis in 10 to 20% of patients. While hemodialysis is not without its own hazards, it is applicable in all patients except those in profound shock and, thus, may be effective in patients in whom peritoneal dialysis has been unsuccessful. Therefore, if possible, it appears wise to refer anuric patients to a dialysis center equipped to perform both peritoneal dialysis and hemodialysis.

Strict fluid restriction is essential in acute renal failure. In the adult, the fluid intake is limited to 300 to 400 ml. per day (to replace insensible loss), plus the quantitative replacement of the patient's measured output (urine volume, nasogastric drainage, and diarrhea). The monitor of patient hydration is weighing the patient twice a day. With proper fluid restriction, adult patients will lose between 0.2 and 0.4 kg. per day. Sodium and chloride are given during the anuric phase only to replace known electrolyte losses. A helpful guide is to replace nasogastric drainage quantitatively with one-half or one-third strength saline. Potassium should be absolutely restricted during the anuric phase since the acidosis, tissue destruction, hemolysis, infection, and hypocalcemia present in postoperative anuric patients all predispose the patient to hyperkalemia. The tolerance of patients to hyperkalemia varies greatly, and the electrocardiogram remains the best guide to hyperkalemic cardiotoxicity. Should hyperkalemic cardiotoxicity occur, dialysis is the treatment of choice. The prevention of hyperkalemia is facilitated by strict potassium restriction, the administration of oral antacids to absorb phosphate and, thus, increase the serum calcium, and the prophylactic administration of sodium ion exchange resins. Several temporizing measures to counteract cardiotoxic hyperkalemia are useful before the definitive treatment by dialysis. Since acidosis potentiates the depressing effect of potassium upon the myocardium, sodium bicarbonate administered intravenously can be effectively utilized to reduce the cardiotoxic effects of hyperkalemia. The acidosis of renal failure is due, in part, to retention of phosphate with a reciprocal depression of the serum calcium. Since calcium is an antagonist of potassium at the myocardial level, the intravenous administration of calcium should be employed to help counteract the cardiotoxic effects of hyperkalemia. A third temporizing measure is the intravenous administration of glucose and insulin (1 unit of regular insulin to 3 gm. of glucose). With insulin administration, extracellular potassium accompanies the cellular uptake of glucose and the serum potassium is decreased. It must be cautioned, however, that the administration of glucose and insulin is frequently complicated by hypoglycemia and that the serum potassium levels rebound to their previous levels soon after glucose and insulin administration has been discontinued.

Protein degradation, either exogenous or endogenous, forms urea and releases the intracellular potassium present in the protein; therefore, protein restriction is mandatory unless the potassium and urea accumulation resulting from exogenous protein catabolism is negated by more frequent dialysis. Carbohydrate is administered in an attempt to decrease the protein catabolism and prevent ketosis from catabolism of endogenous body fat stores. To accomplish both of these goals, a minimum daily intake of 100 gm. of carbohydrate is needed. It is preferable that the entire daily caloric needs of these patients should be met with exogenous carbohydrates. To accomplish this the daily carbohydrate intake should be 250 gm. The administration of 250 gm. of glucose within the fluid limits of the anuric patient is best accomplished by the slow intravenous administration of hypertonic glucose via the brachiosubclavian veins. In the alert patient with a functioning gastrointestinal tract, the parenteral administration of carbohydrates can be supplemented by oral administration.

In an attempt to prevent sepsis, most centers use prophylactic protective isolation. Prophylactic antibiotics are not indicated. Should infection occur, it is then to be treated with the appropriate antibiotics.

Drugs implicated as nephrotoxins and drugs excreted by the kidneys in an active form should not be used in anuric patients. A notable exception to the use of drugs excreted in an active form are the cardiac glycosides. When indicated, digitalization is accomplished using short-acting glycosides within the usual dosage range; however, to prevent digitalis intoxication, the maintenance dosage must be reduced and given only every other or every third day. The previously cited reviews[2–4] discuss the use of the drugs more commonly employed in the anuric patient.

### DIURETIC PHASE

As renal function returns, the kidneys gradually regain the tubular function necessary to maintain homeostasis (ten to fourteen days). It is important to recognize that diuresis is heralded by a rapidly increasing daily urinary output (50 to 100% increase per day). The lag in the return of tubular function imposes new problems in the treatment of these patients. Despite a good urinary output, the BUN may continue to rise and thus continued dialysis may be necessary early in diuresis. During early diuresis, the urinary sodium and potassium losses are excessive and hyponatremia and hypokalemia will be prevented only by precise electrolyte replacement. Adequate sodium and potassium replacement can best be determined by measuring the urinary sodium and potassium losses. During the early diuretic phase, water reabsorption is also impaired and dehydration will occur unless the water intake is increased. Although water replacement during diuresis is increased, it must still be restricted to insensible loss plus measured output. Usually after four or five days of diuresis the kidneys have regained enough tubular function to achieve water homeostasis and, therefore, in most instances the water intake should be limited to 2,500 to 3,000 cc. per day. Excessive water administration will increase urinary output which, of necessity, will increase the electrolyte losses and complicate the patient's management.

## SUMMARY

In this series of 114 patients suffering from postoperative anuric renal failure, the overall mortality rate was 80%. The combined effects of severe underlying disease, concomitant operative trauma, and the complications of renal failure are responsible for the high mortality rate in these patients.

A summary of the principles of the treatment of postoperative renal failure is presented. Patient survival is dependent upon the use of early dialysis and proper adjuvant management.

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# *Section on* PAIN *and* DISTRESS

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## Current Status of Trigeminal Neuralgia Problem

The problem of acute pain of trigeminal neuralgia has been a continuing one for the members of the medical and dental professions. Investigations as to its cause and treatment continue and, currently, have become rather involved. Neurosurgeons and neurologists have a special interest in this problem, and it is fortuitous that we are able to have the following presentation by Dr. Ross, who indicates the current status of the subject.

JOHN S. LUNDY, M.D.

# Trigeminal Pain

## Some Clinical and Experimental Aspects

GILBERT S. ROSS, M.D.

Syracuse

THE LITERATURE of the past twenty years is extensive in its coverage of trigeminal neuralgia.[1] Discussions of its clinical manifestations, etiological mechanisms, and the appropriate medical or surgical treatment are plentiful. It is not the purpose of this article to summarize all of this material but rather to state briefly the two prevailing theories of etiological mechanisms, to present the current drugs in medical management, and to comment on the possible future contributions of experimental animal studies of trigeminal pain to these questions of etiology and drug control.

### PERIPHERAL VS. CENTRAL ETIOLOGIES

For the past decade, there has been discussion among experimenters and clinicians interested in trigeminal pain as to the anatomical site of origin of trigeminal neuralgia (TN). These discussions have polarized into two theoretical camps: those who feel that the abnormality causing the trigeminal pain arises in the peripheral part of the trigeminal system (in peripheral divisions I, II, or III, or in the gasserian ganglion itself or posterior root) and those who consider the origin to be in the central nervous system (brainstem nucleus or pathways of the trigeminal system or both).

The main support for a peripheral locus of etiology is based on both positive and negative evidence. On the positive side, certain types of peripheral lesions impinging on either the posterior root or ganglion have produced a clinical picture very similar to, if not identical with, idiopathic trigeminal neuralgia. Such lesions as vascular malformations in the cerebellopontine angle, cholesteatomas, or acoustic neuromas have been thus implicated. Additional support for a peripheral locus emerged in 1965 when electron microscopic studies of the gasserian ganglion in patients with TN[2] showed degenerative hypermyelination, segmental demyelination, and hypertrophy of axis cylinders with microneuroma formation. In 1966, Kerr and Miller[3] described

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similar pathologic changes in the gasserian ganglia of TN patients. Since they also found definite (but less severe) hypermyelination, segmental demyelination, and Schwann-cell inclusions in the ganglia from normal individuals, which they suggested may have been related to the aging process, it would be of considerable interest to study in the same TN patient the normal ganglion from the uninvolved side.

The fact that central lesions involving the spinal nucleus of the trigeminal nerve do not cause TN constitutes a kind of negative evidence to bolster the theory of peripheral etiology. Additional negative evidence emerges when we consider that it would be difficult to explain how a brainstem lesion could involve the fibers of division I in only 5% of the cases of TN while involving divisions II and III in the remaining 95%.

The support for a central locus of the origin of TN is based primarily on the work of King and co-workers,[4] who, in 1956, demonstrated alterations of trigeminal nerve potentials (associated with chronic overreaction to tactile facial stimulations in cats) due to irritative alumina cream lesions in the spinal tract of the trigeminal nerve (spinal V). However, they did not specifically support a central locus of etiology but suggested only a mechanism centered in spinal V. In 1959, Kugelberg and Lindblom[5] studied the relationship between the stimuli applied to the trigger zone and the pain paroxysm in 50 patients with TN. They did suggest that the mechanism responsible for paroxysmal pain is situated centrally, probably in the brainstem structures related to the spinal V nucleus. This suggestion was based on the occurrence of long summation times, the tendency of the attack to be self-maintained, and the long-lasting refractory period after a paroxysm of pain. They also demonstrated in their patients positive response to the anticonvulsant, diphenylhydantoin, in doses of 3 to 5 mg. per kilogram. The patients reported their attacks were less intense and less frequent during the rest of the day after they had received this drug intravenously. Kugelberg and Lindblom felt that this response to the anticonvulsant was also further evidence for a central mechanism. It is interesting to note that Morrell and co-workers[6] in 1958 had demonstrated an effect of diphenylhydantoin on peripheral nerve and suggested the use of this drug in TN based on this peripheral effect.

Thus, two groups of investigators suggest the use of diphenylhydantoin for TN, one claiming it supports the central etiology of the abnormality in TN, the other suggesting its use based on a peripheral nerve effect of the drug. After a decade, the discussion continues. It is likely that the two theories are not mutually exclusive—that, in the final resolution, elements of one will be contained in the other. The evidence is not all in yet, however, and the patient with TN wants relief from the pain, not theories. Let us, therefore, look at drug therapy. (Space does not permit me to discuss surgical therapy, and my experimental and clinical experience deals primarily with drugs; the reader is, therefore, referred to the literature references for a discussion of the surgical management of TN.)

### DRUG THERAPY

Since the end of the 18th century when Fothergill described trigeminal facial pain, numerous drugs have been employed for the relief of this excruciating pain. The following medications have been used, were reported to be successful, but are no longer in vogue: [1] trichlorethylene inhalation,[7,8] [2] cobra venom, intracutaneously,[9] [3] histamine desensitization,[10] and [4] vitamin $B_{12}$[11] and other vitamin therapies. Several other drugs are currently in active use. In 1958,[12] King reported a preliminary study of the use of mephenesin on facial pain. At the end of one year, 22 out of 29 patients reported either no pain or only mild pain while maintained on this drug. In a follow-up study reported by the same author in 1966,[13] fifty-two patients who had all received mephenesin carbamate suspension were observed over a period of seven years; 60% maintained sufficient comfort to make a surgical procedure unnecessary.

Diphenylhydantoin has also been shown to be effective, at least temporarily, for the relief of TN, as reported in several studies.[14–16] It appears to be only partially effective for the relief of TN but may be useful in combination with mephenesin carbamate. It is interesting to note that diphenylhydantoin has been reported to inhibit synaptic transmission in the spinal trigeminal nucleus[17] (which, since diphenylhydantoin does have some effect on clinical trigeminal pain, would support the central etiology of idiopathic trigeminal neuralgia) but it also has been reported to increase the threshold of the peripheral nerve to electrical stimulations.[6] As indicated earlier, this might support the peripheral etiology of trigmenial neuralgia.

The latest drug to be investigated for TN is carbamazepine (Tegretol®). Its usefulness in TN was first reported in 1962 by Blom.[18] Since that time, numerous reports[19–21] have indicated its effectiveness in the short- and long-term relief of tic pain. Fromm and Killian[22] have shown that carbamazepine acts like diphenylhydantoin, but more effectively, to depress synaptic transmission in the spinal trigeminal nucleus. It was their conclusion that the more effective the drug is in the clinical relief of TN, the more complete is the synaptic depression in the spinal trigeminal nucleus. (Is this not further evidence for a central etiology of TN?)

Dimethylsulfoxide (DMSO) has also been reported to be effective in TN. In a 1965 study by Rosenbaum and associates,[23] 11 patients were treated with topical application of DMSO and 9 reported improvement for a duration of from one to six months. These authors also report that DMSO blocked conduction in isolated nerves in animal laboratory experiments. (Is this evidence for peripheral etiology of TN?)

## AN EXPERIMENTAL APPROACH

From the foregoing discussion of theories of etiology and drug treatment in trigeminal neuralgia, it is obvious that many areas need further investigation. For the past several years, we have been working with an experimental laboratory technique[24,25] which may provide some information related to the questions posed throughout this article. Briefly, it is a behavioral technique to study pain in the alert, awake animal (Rhesus monkey), in which the animal's sensory experience of pain is "communicated" to the experimenter by means of lever presses which reduce the intensity of the shocks to the gasserian ganglion. The animal controls the level of shock intensity, can maintain this level for many hours, and reproduces it from one experimental session to the next. The experimenter can alter this level by changing the stimulus parameters, prolonging an experimental session, and administering a variety of drugs. Known analgesic drugs such as morphine and meperidine, in therapeutic dosages, induce the animals to find and maintain a higher lever of tolerated intensity. It should be emphasized at this juncture that I do not present this experimental technique as an animal model of trigeminal neuralgia but as a method producing recurrent trigeminal pain, the intensity of which is under the complete behavioral control of the animal.

In relating this technique to the problems of defining etiological mechanisms of trigeminal neuralgia in human beings, drug effects, and so forth, a description of one experiment (relating to the clinical use of Tegretol) now underway in our laboratory might be illustrative. The usefulness of Tegretol in trigeminal neuralgia has been discussed. Hernandez-Peon[26] has demonstrated in cats that carbamazepine produced a partial but significant depression of the trigeminal-evoked potentials recorded from the bulbar level and an almost complete abolition of the potentials recorded from the center median nucleus of the thalamus. He suggested that the effectiveness of carbamazepine in the relief of trigeminal neuralgia may be accounted for by the drug's selective depressant effect occurring at the bulbar as well as the thalamic level of trigeminal pain transmission. But did the carbamezapine perhaps affect the cat's "reaction" to the painful stimuli being applied to its infraorbital nerve? This was not reported. In our laboratory, we are beginning to study* the effect of intravenous carbamazepine on the monkey's behavioral response to the noxious stimuli being applied to the gasserian ganglion. In view of Hernandez-Peon's work, we are seeking to know whether the effect demonstrated, if any, would be changed by destruction of the center median, or spinal trigeminal sensory nucleus, or descending tract of spinal V, or all three. In some monkeys who have received carbamazepine, we plan to repeat the drug after one or more of these structures are destroyed by radio-frequency lesions through electrodes previously implanted in these areas. From these studies, we expect to have further data regarding the mode and site of action of the drug.

## SUMMARY

I have briefly presented the current thoughts on the site of origin of the pain of human trigeminal neuralgia and a review of drugs used in the treatment of this condition. I have also suggested how animal studies now in progress might contribute information to the clinical syndrome discussed.

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I wish to thank Miss Mary Ann Spadaro, sophomore medical student at the State University of New York, Upstate Medical Center, for her help in the preparation of this article.

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*These studies supported by grant No. NB05850-04 from National Institute of Neurological Diseases and Blindness of the United States Public Health Service

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# Donald W. Cowan, M.D.

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I CONSIDERED IT A GREAT HONOR when Dr. J. A. Myers invited me to write a profile of Dr. Cowan. It was in 1937 that Dr. Cowan joined the staff of the University of Minnesota Health Service and a few years later became the assistant director. So, for twenty-four years of the twenty-five years that I was director of the service, Don Cowan was my right hand man; and, as I look back on those years, I realize how much he did to aid in the development of the health service and, also, how much he did to give me, personally, moral support when it was needed.

As is true of many people who are in the field of university health work, it was accident rather than definite planning that brought Don to his job at Minnesota.

Dr. Cowan was born in Rochester, Minn., March 26, 1907. He lived there most of his life, up to the time he entered the university medical school. After graduation from high school in June 1923, he worked in a Mayo Clinic research laboratory at St. Mary's Hospital. He says that at that time, he was "really hooked by medicine." The influence of such well-known medical researchers as Leonard Rowntree, Norman Keith, Albert Snell, Russell Wilder, Edgar Allen, and others made a great impression on him and influenced his decision to study medicine.

At that time he thought he wanted to be a full-time, full-fledged laboratory researcher. He started taking chemistry courses and so forth at Rochester Junior College in the fall of 1923. In fact, he continued full-time work for the Mayo Clinic plus part-time classwork in Rochester Junior College for four years (1923 to 1927). He received an associate of arts degree and had completed all of the premedical requirements for entrance to the university medical school, to which he was admitted in the fall of 1927. During his four years in school, he served as a part-time assistant in physiology, under Dr. Fred Scott. In addition to completing the requirements for the M.D. degree, he also did additional graduate work and received an M.S. with a major in physiology and a minor in pharmacology. In 1931 he was graduated from the medical school with a B.S., M.S., and M.D. degree. His medical degree was magna cum laude. Other honors which he received at that time were election to Alpha Omega Alpha, Sigma Xi, and recipient of the Charles Lyman Green Prize in physiology.

Those were depression times. Don had borrowed money for his education and when an opportunity came to teach physiology at the State University of Iowa Medical School, he accepted it and, as he says, moved there "for one year in order to pay off my debts." He stayed at the University of Iowa for five years and then made the decision that he wanted to take an internship and go into some type of clinical

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medicine. He took his internship at the U.S. Marine Hospital in Chicago and near the end of the year was accepted as a Fellow in medicine at the Mayo Clinic.

In 1929, while still in medical school, he married Ann L. Calkins, whose brother, Dr. Leroy Calkins, later became head of the department of obstetrics and gynecology at the University of Kansas Medical School. The Cowans have 1 daughter, who is now married and has 2 children.

After completing his internship, the depression was still with us, and since Don had a wife and child to support, he decided to postpone the fellowship for one year "to get a little money ahead."

On a visit to Minneapolis, he went to see Dr. Diehl, who had recently become dean of the medical school. Dr. Diehl suggested he come to see me at the health service. Fortunately, there was a vacancy on the staff and I persuaded Dr. Cowan to accept the position starting July 1, 1937.

When I decided to retire in 1961, Don Cowan was the natural person for the university administration to appoint as director of the health service. As I have had an opportunity to see what he has accomplished in the past six years, I realize more fully and with gratitude the help he had been to me during my years as director.

Dr. Cowan is the type of person who is very quiet and self-effacing, while doing whatever his job may be in a most efficient and direct manner. He has many unusual qualities, which endear him to all of those who work with him. His understanding of people, his dry sense of humor, and his ability to get straight to the point on any problem are rare qualities.

During the past years, he not only has served as assistant director of the university health service, but has been an associate professor and now professor in the school of public health. Not long after joining the health service staff, he became interested in the field of allergy and has done some outstanding research in that field. He has served at various periods as the head of the allergy clinic in the outpatient department of the medical school.

Dr. Cowan has received many honors other than those referred to above. He has been secretary, vice-president, and president of the North Central Section of the American College Health Association. One year ago, he was elected secretary-treasurer of the American College Health Association. He is a diplomate of the American Board of Preventive Medicine and Public Health.

Those of us who have had the privilege of working with and knowing Dr. Cowan appreciate especially his many fine personal characteristics. His loyalty, integrity, wisdom, and vision have long been admired by all of his colleagues. Not only is he an outstanding administrator, but a fine person as well!

# Transactions of the North Dakota State Medical Association

## TRANSACTIONS OF THE TWENTY-FIRST ANNUAL MEETING OF THE WOMAN'S AUXILIARY TO THE NORTH DAKOTA STATE MEDICAL ASSOCIATION

Bismarck, North Dakota, May 5, 6, and 7, 1967

### Pre-Convention Board Meeting

The meeting was called to order by Mrs. E. O. Hieb, State President. Mrs. L. G. Pray, President-Elect, led the board members in the auxiliary pledge. Twenty members answered the roll call. A quorum was present. Those answering the roll call were as follows:

Mrs. Edwin O. Hieb, President; Mrs. Lawrence Pray, President-Elect; Mrs. Harold Evans, First Vice-President; Mrs. Carl London, Second Vice-President; Mrs. George Holt, Corresponding Secretary; Mrs. Paul Ahlness, Recording Secretary; Mrs. Roger Berg, Treasurer; Mrs. Robert Schoregge, A.M.A.E.R.F.; Mrs. V. J. Fischer, By-Laws; Mrs. Paul Klosterman, Health Careers; Mrs. Thomas Schafer, Liaison to WASAMA; Mrs. Clyde Smith, Parliamentarian; Mrs. S. J. Thakor, Mental Health; Mrs. M. A. K. Lommen, Nominating; Mrs. Kenneth Amstutz, Safety; Mrs. James Moses, Student Loan Fund; Mrs. William Hurly, 4th District President; Mrs. Charles Hamilton, 6th District President; Mrs. Donald Barnard, 1st District Councilor; Mrs. Robert Tudor, 6th District Councilor.

Minutes of the fall board meeting were read and approved. Recommendations of standing committees were:

*Membership Committee.* Mrs. Pray asked us to keep aware of new arrivals and welcome them. Early contacts are important. The present number of members is up, but so are the doctors in the state, so that our percentage is approximately the same as last year.

*Program Committee.* Mrs. Evans reported that the magazine, *M.D.'s Wife*, is popular.

*Nominating Committee.* Mrs. Lommen asked that the districts keep lists of those members who have held district offices. This eases the job of the nominating committee.

*Health Careers Committee.* Mrs. Klosterman reported that, at the present, the State Health Careers rally has no place to hold its annual meeting. There is a possibility of Richardton.

*By-Laws Committee.* Mrs. Fischer said it was time to completely revise the state by-laws to bring them up to the national by-laws.

*Legislation Committee.* Mrs. Christu was absent. Mrs. Hieb read her report. The AMA has asked our help in writing to our congressmen in regard to Bill HR 5710. She asked that we do two things: [1] oppose expansion of aid to the disabled of any age under Title 18, and [2] lend support to the AMA to limit eligibility to those who genuinely need financial aid and help care. Mrs. Schoregge so moved, it was seconded by Mrs. Holt, and passed.

*International Health Activities Committee.* We shipped approximately 25 cartons of drug samples at last year's convention. We can also use old instruments, even those which need repair.

*Safety Committee.* Mrs. Amstutz has taken a defensive drivers training course, given by the National Safety Council. She recommends all auxiliary members take this course, if available.

*News, Views and Cues publication.* The Editorial Board felt that a name change would be in the best interest of our auxiliary publication. They suggested "North Dakota Medical Auxiliary News."

At this point, Mrs. Karl Ritter, the National President-Elect, was introduced by Mrs. Hieb. A discussion followed on the name change and 2 suggestions were made. The first was "M.D.'s Wife" and the second was "M.D.'s Mrs." A motion was made by Mrs. Fischer to bring this before the convention. It was seconded by Mrs. Smith and passed.

Mrs. Berg gave the Treasurer's Report. The total balance on hand at present is $1,937.03.

*Budget Committee.* A discussion was held on the amount budgeted for the publication "News, Views and Cues." It was recommended to increase the budget to meet the cost of last year's editions.

*Student Loan Fund Committee.* Mrs. Moses reported that a total of $2,764.00 was contributed to the Student Loan Fund this year. The amount has increased each year. She encouraged us to stress to the districts that money was needed each year. Mrs. Hieb read a report from Dean Harwood which said that we were $716.00 in the red this year. This was the result of a bookkeeping error in Grand Forks. It was suggested that we acquire some public relations from those who have utilized this loan fund, to encourage the respective districts to donate to the fund.

Mrs. Hieb read a letter from the New Jersey State Medical Auxiliary asking the North Dakota Medical Auxiliary to contribute to a gift for Miss Margaret Wolfe, as she completes twenty-five years of service as secretary to the national auxiliary. They recommended a donation of $10.00. Mrs. Schoregge so moved, Mrs. Lommen seconded and it was passed to donate to this fund from our state treasury.

A letter from the National Auxiliary regarding a training program for Vietnamese in medical fields was read by Mrs. Hieb. The National Auxiliary is one of 3 sponsors of this program. The auxiliary would like to give these students $25.00 per week, per student, to help them meet expenses. The program is to be supplemental to A.M.A.E.R.F. and local loan funds. Mrs. Lommen suggested that we, in the districts, have a dish sitting at meetings for spare change. A discussion followed. Mrs. London moved that we pass a dish at the luncheon May 6. This was seconded by Mrs. Amstutz and passed.

The meeting was adjourned.

MRS. PAUL AHLNESS, *Recording Secretary*

The twenty-first annual meeting of the Woman's Auxiliary to the North Dakota State Medical Association convened at the G. P. Hotel at 9:30 A.M. May 6, 1967, with Mrs. E. O. Hieb, President, presiding. Mrs. L. G. Pray led the group in the pledge of loyalty and Mrs. Harold Evans led us in prayer.

President of the Sixth District, Mrs. Charles Hamilton, welcomed all auxiliary members to the convention. The response was given by Mrs. George Holt, who expressed the appreciation of all present, to the sixth district, to Mrs. E. O. Hieb, to the State Committees, and to Mrs. Karl F. Ritter, Lima, Ohio, President-Elect of the Auxiliary to the American Medical Association.

Mrs. Hieb presented Dr. Glenn Toomey, President of the North Dakota State Medical Association, who brought greetings from the State Medical Association, and who thanked the auxiliary members for their cooperation. He encouraged continued and increased action in the districts and expressed support of the team dues pay.

Mrs. R. R. Kling was in charge of the Memoriam Service for Rebecca Vinje, LaVina Brink, and Evelyn Brandt. The Twenty-Third Psalm was sung by Mrs. J. M. Knutson and Mrs. M. J. E. Johnson. Mrs. Johnson read Psalm One Hundred and Twenty-One.

Mrs. Paul Ahlness, Recording Secretary, called roll. Answering were: Mrs. E. O. Hieb, President; Mrs. Lawrence Pray, President-Elect; Mrs. Harold Evans, First Vice-President; Mrs. Carl London, Second Vice-President; Mrs. George Holt, Corresponding Secretary; Mrs. Paul Ahlness, Recording Secretary; Mrs. Robert Schoregge, A.M.A.E.R.F.; Mrs. V. J. Fischer, By-Laws; Mrs. Paul Klosterman, Health Careers; Mrs. Thomas Schafer, Liaison to WASAMA; Mrs. Clyde Smith, Parliamentarian; Mrs. S. J. Thakor, Mental Health; Mrs. M. A. K. Lommen, Nominating; Mrs. Kenneth Amstutz, Safety; Mrs. Rodney Clark, District News Editor for News, Views and Cues; Mrs. James Moses, Student Loan Fund; Mrs. C. Robert Miller, Second District President; Mrs. William Hurly, Fourth District President; Mrs. Charles Hamilton, Sixth District President; Mrs. Donald Barnard, First District Councilor; and Mrs. Samuel Shea, Fourth District Councilor.

District delegates present were: First District, Mrs. J. B. Wenzel, Mrs. Robert Ulmer, and Mrs. Wayne LeBien. Third District, Mrs. Richard Helm and Mrs. Ralph Mahowald. Sixth District, Mrs. Clifford Peters, Mrs. Robert Kling, and Mrs. Jerry Knudsen. Seventh District, Mrs. John Van der Linde. Eighth District, Mrs. Donald Skjei; and Ninth District, Mrs. Robert Hankins. A quorum was present.

Minutes of the preconvention board meeting were read, corrected, and approved.

Mrs. E. O. Hieb introduced Mrs. Karl Ritter, National President-Elect of the Woman's Auxiliary.

Mrs. Moses reported that 61 members and 4 guests were registered for the morning session. Mrs. Smith read the rules of order for the convention.

Mrs. Hieb reported on our present status and President-Elect Mrs. Pray reported on membership.

Mrs. Schafer asked what to do with extra money in the WASAMA fund which the State Auxiliary had given them to send delegates to Chicago. The delegates were unable to attend and the student wives were questioning further use for this donation.

Mrs. Ahlness read the Historian's Report in the absence of Mrs. Hanewald.

Mrs. Schoregge gave the A.M.A.E.R.F. report and presented Certificates of Achievement to Mrs. Hurly of the Fourth District for the greatest increase in donation per capita, and to Mrs. Pray of the First District for greatest amount given.

Mrs. Klosterman reported that a Health Careers Booklet for the State of North Dakota is ready for publication.

Legislation Report was read by Mrs. Ahlness in the absence of Mrs. Christu.

The International Health Activities Report was given by Mrs. Hieb. It was a report as of May 1966, following last year's convention.

In the absence of Mrs. Saxvik, the Publicity Report was given by Mrs. Pfeifle.

The Community Service Report was given by Mrs. Barnard in the absence of Mrs. Traynor.

Mrs. Ahlness read the report of *News, Views and Cues* for the Publications Committee.

The Medical Auxiliary Student Loan Fund Committee Report was given by Mrs. James Moses. She read the report of Dean Harwood on the deficit, and this deficit was explained by Mrs. M. A. K. Lommen as a bookkeeping error in Grand Forks.

The Nominations Committee Report was read by Mrs. Ahlness. The following slate of officers is presented to the convention: For President, Mrs. Lawrence Pray of Fargo; for President-Elect, Mrs. Harold Evans of Grand Forks; for First Vice-President, Mrs. Carl London of Minot; for Second Vice-President, Mrs. S. J. Thakor of Bismarck; for Recording Secretary, Mrs. Paul Ahlness of Bowman; for Treasurer, Mrs. Warren Macaulay of Fargo. There were no nominations from the floor. Mrs. Schoregge moved that a unanimous ballot be cast for the slate as reported from the Nominating Committee. Mrs. Hurly seconded and it was passed.

The reports of the District Presidents were read and are on file.

The Treasurer's Report was read by Mrs. Berg. Mrs. Lommen presented a bill for $2.69 to send the Journal-Lancet to the bindery. Mrs. London moved that this bill be allowed. Mrs. Holt seconded and it was passed.

Mrs. Berg read the budget proposed for 1967-68. A discussion followed on how to meet the annual deficit. A raise in dues was suggested since the team dues program does not seem acceptable to all districts. Mrs. Ritter suggested that team membership should remain permissive in individual districts because of the difference in fiscal years in the Medical Association and the Medical Auxiliary. Mrs. Smith said there was no alternative but to raise dues to meet the budget recommendation and moved to raise the state dues $1.00 per member to a total of $4.00. This was seconded by Mrs. Mahowald. The motion passed but it is to be only a recommendation to the next convention. Mrs. Lommen moved to accept the budget for 1967-68, seconded by Mrs. Ulmer and passed.

The meeting was recessed for luncheon.

Mrs. Hieb reconvened the meeting following the luncheon. Mrs. Lommen moved to send $10.00 to the National Auxiliary from the State Treasury, as North Dakota's part of a gift to Miss Margaret Wolfe, in celebration of her twenty-five years as executive secretary. Mrs. Ulmer seconded and it was passed.

The luncheon donation for the Vietnamese Student Aid Program accumulated a total of $37.74, which will be sent to Washington.

Mrs. Hieb encouraged auxiliary members to expose expansion of Medicare under Title 18, and to support the AMA testimony on Bill HR 5710, limiting aid to those in genuine need of financial assistance for medical care. Mrs. Hieb will send out further information to district presidents.

A discussion arose as to the name change of *News, Views and Cues.* Suggestions were "M.D.'s Wife" and "M.D.'s Mrs." Mrs. Mahowald moved that we choose the second nomination, Mrs. Helm seconded and it was passed. The new name of *News, Views and Cues* is "North Dakota M.D.'s Mrs."

Mrs. Mahowald moved to leave the unused convention fund money in the WASAMA fund for future use. Mrs. Evans seconded and it was passed.

The site of this year's Health Careers Rally will be tabled until the June meeting of the Health Careers Council, and Grand Forks will then be approached as a possible host.

Mrs. Charlotte Oien of Bismarck, a past officer of WASAMA, asked for help for the medical students in clearing up the problems of securing medical school loans and the repayment of these loans. She also requested that families in the areas where medical students serve their clerkships, ask the families of the medical students to visit for a weekend. Mrs. Hieb will see that Dean Harwood is informed that all loan resources be made available to the medical students in clear form.

A discussion followed on *News, Views and Cues,* and its worth as a publication. Mrs. Schafer moved to cut the issues to 2—a post fall board meeting issue and a call to convention issue. Mrs. Hurly seconded and this motion was passed.

Mrs. Moses gave the final registration report. Eighty-one members and 6 guests were registered.

The meeting was adjourned by Mrs. Hieb.

Mrs. Karl Ritter installed the new officers: President, Mrs. Lawrence Pray; President-Elect, Mrs. Harold Evans; First Vice-President, Mrs. Carl London; Second Vice-President, Mrs. S. J. Thakor; and Recording Secretary, Mrs. Paul Ahlness.

Mrs. Hieb presented Mrs. Pray with the President's Pin and in return, Mrs. Pray gave Mrs. Hieb the Past President's Pin.

MRS. PAUL AHLNESS, *Recording Secretary*

### Convention Report

Following the Daisy Theme of the convention, the luncheon was served in the G. P. Hotel at 12:30 P.M. May 6, 1967. Mrs. L. G. Pray presided and introduced the honored guests at the head table and recognized Past Presidents seated among the auxiliary members. Then she introduced Dr. V. J. Fischer of Minot, President of the State Medical Association, who gave the luncheon address. Dr. Fischer noted that the student loan fund is highly appreciated by both doctors and students. The Deans Fund, supplied through A.M.A.E.R.F., has helped medical students also. He remarked that other aids, those not financial, are more important. The presence of wives and their aid in the everyday life of a doctor, is most important. Qualities considered very necessary are individual care, attention, and effort.

Mrs. Pray then introduced Mrs. Karl Ritter, President-Elect of the National Medical Auxiliary, who gave the main luncheon address. Mrs. Ritter remarked that North Dakota is unique in having its own auxiliary student loan fund. She encouraged us to evaluate past and present accomplishments and to scrutinize our individual participation as to increase in membership percentage, increase in A.M.A.E.R.F. donations, help in health man power, and wider leadership in communities. She stressed that programs of the National Auxiliary are many and varied and should be fitted to each local need. Team membership is a goal. It is only voluntary and we must convince non-members of the need to join. We can encourage them to realize total satisfaction obtained through total involvement and we should be prepared to utilize membership orientation material. We must meet the expanding need for paramedical personnel through the health careers committees. Mrs. Ritter also acknowledged our part in donations to A.M.A.E.R.F., the Vietnamese Student Project, and the necessity of our participation in legislation, especially A.M.P.A.C. Mrs. Ritter closed with a 3-point attack. We should evaluate on a local level, examine our auxiliaries, and educate and orientate our doctors' wives.

Mrs. Ritter and Mrs. Hieb were presented gifts of appreciation, and door prizes were handed out. Mrs. Pray dismissed the meeting.

MRS. PAUL AHLNESS, *Recording Secretary*

## MINUTES OF THE POST CONVENTION BOARD MEETING

### Bismarck, North Dakota

### May 6, 1967

The meeting was called to order by Mrs. L. G. Pray, President. Roll was called and a quorum was present. The nominating committee was chosen. It will be headed by Mrs. Hieb. The committee is as follows: Mrs. Van der Linde, Jamestown; Mrs. Walter Hanewald, Dickinson; Mrs. George Wilson, Grand Forks; and Mrs. O. A. Sedlak of Fargo. Alternates are: Mrs. Henry Kermott, Minot; Mrs. William Hurly, Minot; Mrs. Kenneth Amstutz, Minot; and Mrs. Gale Richardson, Minot.

Mrs. Pray announced that the Chicago Fall Conference will be held October 8-11, 1967, followed by a workshop, October 12 and 13. The fall board meeting will possibly be in Fargo sometime in October. Mrs. Pray asked that standing committee chairmen please acquire their material from their predecessors before leaving the convention.

A communication from the National Auxiliary was read by Mrs. Pray. It is important that in order to receive the magazine, "M.D.'s Wife," district dues be sent in by the treasurer as soon as possible. Only when the dues are sent in to National, will *M.D.'s Wife* be mailed.

Delegates were chosen to the AMA convention in Atlantic City. They are: Mrs. L. G. Pray, President; Mrs. Harold Evans, Delegate; and Mrs. Thomas Pederson, Jamestown, Alternate.

The meeting was adjourned.

MRS. PAUL AHLNESS, *Recording Secretary*

The North Dakota District Medical Auxiliaries wish to express their appreciation to the Bismarck Auxiliary for inviting us to hold this convention here. To the committees who planned and are working on this convention our very sincere appreciation.

To Mrs. E. O. Hieb, our state president, for representing us at the National Convention, the workshop in Chicago, for visitations to our various districts, for her fine leadership and inspiration, a very sincere thank you.

To our state committees who served under Pat for their information and guidance as to how best we could serve our state and national Medical Association, a big thank you.

To our guest of honor, Mrs. Karl F. Ritter of Lima, Ohio, president-elect of the Woman's Auxiliary to the American Medical Association, for honoring us with her presence at this convention, we are excited and greatly honored and shall look forward with much interest to the message she will bring us. May we again say thank you to our host auxiliary for their warm and friendly welcome and to the host city for their free parking permits. Thank you.

Mrs. George H. Holt, *Corresponding Secretary*

### Memorial Service

Death is but crossing the world, as friends do the seas; they live in one another still. . . .

This is the comfort of friends, that though they may be said to die, yet their friendship and society are, in the best sense, ever present because immortal.

Rebecca Vinje, age 85, a member of Traill Steele (10th District) Auxiliary, passed away Nov. 6, 1966, in Hazen. She was the widow of Dr. Syver Vinje who had practiced for many years in Hillsboro. She was the mother of Dr. Ralph Vinje of Bismarck and Dr. Edmund Vinje of Hazen.

La Vina Brink, 51, passed away June 17, 1966. She was the wife of Dr. N. O. Brink of Bismarck, and the mother of 3 daughters and 3 sons. La Vina was a long time member of the Sixth District Auxiliary. She was a nurse and served the auxiliary in Health Careers activities.

Evelyn Brandt, age 80, passed away Dec. 22, 1966, in Bismarck. She was the widow of Dr. Albert Brandt, who had practiced medicine in Bismarck for many years until his retirement twenty years ago.

Song: Twenty-third Psalm – Mrs. J. M. Knudsen and Mrs. M. J. E. Johnson. Mrs. M. J. E. Johnson read Psalm 121.

Mrs. R. R. Kling, *Chairman*

### Roll Call

| | *Preconvention Board Meeting* | *General Session* |
|---|---|---|
| 1. Mrs. Edwin O. Hieb | P S.O. | P S.O. |
| 2. Mrs. Lawrence C. Pray | P S.O. D.P. | P S.O. D.P. |
| 3. Mrs. Harold Evans | P S.O. S.C. | P S.O. S.C. |
| 4. Mrs. Carl B. London | P S.O. | P S.O. |
| 5. Mrs. George Holt | P S.O. D.C. | P S.O. D.C. |
| 6. Mrs. Paul Ahlness | P S.O. | P S.O. |
| 7. Mrs. Roger Berg | P S.O. | S.O. |
| 8. Mrs. Robert D. Schoregge | P S.C. | P S.C. |
| 9. Mrs. V. J. Fischer | P S.C. | P S.C. |
| 10. Mrs. Mack Traynor | S.C. | S.C. |
| 11. Mrs. Robert McLean | S.C. D.C. | S.C. D.C. |
| 12. Mrs. Paul Klosterman | P S.C. | P S.C. |
| 13. Mrs. Walter Hanewald | S.C. D.C. | S.C. D.C. |
| 14. Mrs. James Miles | S.C. | S.C. |
| 15. Mrs. Chris Christu | S.C. | S.C. |
| 16. Mrs. Thomas Schafer | P S.C. | P S.C. |
| 17. Mrs. Clyde Smith | P S.C. | P S.C. |
| 18. Mrs. Sushen Thakor | P S.C. | P S.C. |
| 19. Mrs. M. A. K. Lommen | P S.C. | P S.C. |
| 20. Mrs. Russell Saxvik | S.C. | S.C. |
| 21. Mrs. Kenneth Amstutz | P S.C. | P S.C. |
| 22. Mrs. James R. Olson | S.C. | S.C. |
| 23. Mrs. Rodney Clark | S.C. | P S.C. |
| 24. Mrs. John Lambie | S.C. | S.C. |
| 25. Mrs. Joseph Craven | S.C. D.P. | S.C. D.P. |
| 26. Mrs. James Moses | P S.C. | P S.C. |
| 27. Mrs. C. Robert Miller | D.P. | P D.P. |
| 28. Mrs. George Wilson | D.P. | D.P. |
| 29. Mrs. Wm. Hurley | P D.P. | P D.P. |
| 30. Mrs. Charles Hamilton | P D.P. | P D.P. |
| 31. Mrs. John Beall | D.P. | D.P. |
| 32. Mrs. Andrew Sawchuk | D.P. | D.P. |
| 33. Mrs. Ronald Kloster | D.P. | D.P. |
| 34. Mrs. Donald Barnard | P D.C. | P D.C. |
| 35. Mrs. J. Terlecki | D.C. | D.C. |
| 36. Mrs. R. C. Painter | D.C. | D.C. |
| 37. Mrs. Samuel Shea | D.C. | P D.C. |
| 38. Mrs. Robert Tudor | P D.C. | D.C. |
| 39. Mrs. Gordon Ellis | D.C. | D.C. |

S.O. – State Officer
S.C. – State Chairman
D.P. – District President
D.C. – District Councilor

Quorum: One third (⅓) or more of the voting delegates shall constitute a quorum.

There are 6 duplications in the roll call (e.g. an individual's name appears in 2 capacities) and they appear in the roll call in each capacity.

The quorum is established upon 39 (e.g. 45–6 duplications) for the board meeting. Quorum for business session is one third of the voting delegates (which includes the 39 members of the board plus 1 delegate for each 25 members or fraction thereof).

### Delegates Roll Call by District

I. Mrs. J. B. Wenzel, Mrs. Robert Uhner, and Mrs. Wayne LeBien. III. Mrs. Richard Helm and Mrs. Ralph Mahowald. VI. Mrs. Cliff Peters, Mrs. Robert Kling, and Mrs. Jerry Knudsen. VII. Mrs. John Van der Linde. VIII. Mrs. Donald Skjei. IX. Mrs. Robert Hankins, all were present.

### Progress Report — 1966-67

I am truly proud to report on the progress of our twenty-one-year-old Woman's Auxiliary to the North Dakota State Medical Association. We are growing in stature each year, and I believe we duly justify our existence as an organization. Let me tell you why:

The membership has grown, however we have 100% team membership in only 2 districts. We hope for greater achievement toward this goal in 1967-68.

Your several Health Career Clubs provide a wide acquaintance in medically oriented fields for a great number of interested youth. An active Candy Striper program in 3 districts trains high school age girls to serve as volunteers in hospitals. We point with pride to our own Past President, Flo Hankins, who has worked diligently for nine years as advisor to her local Medicorp group, for she is now serving nationally as North Central Regional Health Careers Chairman. The dedicated interest in health careers on a state level is evidenced by the ever increasing support you've given the Medical Auxiliary Student Loan Fund which now has a net worth of roundly $38,000.

Donations, fund raising projects, and memorials have enabled us to send a larger contribution to A.M.A.E.R.F. These monies, unless designated otherwise, are returned to the University of North Dakota Medical School for use where most needed for the benefit of the medical students. Dean Harwood has often reminded us that it is the most valuable aid he receives in any one year.

A charter chapter of W.A.S.A.M.A. with 30 active members at the University of North Dakota has our financial and advisory support. We can soon look forward to their membership in Auxiliaries throughout the country.

Many facets of health have been explored and the needs are being cared for as our members effectively serve others in their own communities. Participation in the establishment of 4 Community Health Centers throughout the State, blood bank services, immunization clinics, a rehabilitation center, fund raising, making available V.D. education in the public school system, lending assistance to the Disaster Nurse Committee, sponsoring senior citizens' gatherings, providing "Christmas" for needy families, combined with work in church, youth, and cultural groups keep our North Dakota Auxiliary members busy and progressive — indeed leaders in their communities.

We are happy each year to pack and ship a quantity of drugs, soap, bandages, and hospital gowns to World Medical Relief through our I.H.A. program.

Promotion of sponsorship of Defensive Driver Training courses for young and old will make us even more conscious of traffic safety.

This year we are acquainting ourselves with the new package programs from National. Seven different categories cover a wide scope on youth health and present excellent material for our use.

All of these Auxiliary programs make for progress and guide our members toward constructive activity in the promotion of health and good will. This then, fulfills the primary objective of our national organization which is "to assist the American Medical Association in its program for the advancement of Medicine and Public Health."

My warm and sincere gratitude to the officers, board, and members of this Auxiliary for their cooperative efforts and accomplishments for this year of 1966-67.

Mrs. Edwin O. Hieb, *President*

## Membership Report — 1966-67

Last fall all districts received a letter encouraging the recruitment of all eligible doctors' wives for members. They were also asked to request their District Medical Society to keep them informed of new doctors coming into the community. The latter part of December, at the request of our regional Vice-President, Mrs. Willard Scrivner, a questionnaire was sent to all districts to see how membership was progressing. It seemed to be too early in the year for an accurate answer because many members had not paid their dues.

Two districts have team memberships; they are districts 7 and 9. There are 9 organized districts. District 5 is not organized but has 8 members at large.

| *Auxiliary Membership District* | *Medical Society Membership District* |
|---|---|
| 1 – 83 | 1 – 104 |
| 2 – 16 | 2 – 38 |
| 3 – 55 | 3 – 79 |
| 4 – 41 | 4 – 60 |
| 5 – 8 Members at large | 5 – 11 |
| 6 – 63 | 6 – 90 |
| 7 – 28 plus 1 honorary | 7 – 30 |
| 8 – 17 | 8 – 21 |
| 9 – 26 | 9 – 25 |
| 10 – 11 | 10 – 10 |

Our Auxiliary membership this year is 348; last year it was 347. The membership in the North Dakota State Medical Association is 468; last year it was 437.

We have 2 honorary members.

Mrs. L. G. Pray, *Chairman*

## State Program — 1966-67

North Dakota has 10 district auxiliaries. Seven districts were contacted by letters for their programs of the year. One district is not organized and 3 districts only meet socially.

All districts state they enjoy the *M.D.'s Wife* magazine but have not used it as a source of program material. The Direct Line has been a source of material for 1 district.

I feel there have been many outstanding programs throughout the state, all of which will probably be covered by community service and district president reports more thoroughly.

Mrs. H. W. Evans, *Chairman*

## WASAMA Report — 1966-67

The Woman's Auxiliary to the Student American Association at U.N.D. Medical School consists of 30 paid members. The officers for this past year were:

President . . . . . . . . . . . . . . . Mrs. Victor Corbert
Vice-President . . . . . . . . . . Mrs. Donald Monda
Treasurer . . . . . . . . . . . . . . Mrs. David Eckberg
Secretary . . . . . . . . . . . . . . . . . Mrs. Boyd Hagen

Because of their early and increased member registration the local group received an award from WASAMA's national office.

Twelve meetings have been held this year. Some have been in doctors' homes and some at the University Student Center.

For their service project they furnished a room in the new home of the Valley Day Care Center. This included a bed, chair, table, lamp, curtains, and other furnishings. They also are offering again 2 book scholarships to deserving freshmen medical students selected by the dean.

This year WASAMA celebrates its tenth anniversary and our Chapter at U.N.D. can be proud of being a charter member. At this year's national convention in Chicago, May 3-6, the chapter will send 4 representatives of which 2 are voting delegates. The State Woman's Medical Auxiliary will help defray these expenses with a $100.00 contribution.

It has been a pleasure working with such a delightful group of young women. They have such boundless energies and I look for great things to come from them.

Mrs. Thomas L. Schafer, *Chairman*

## Historian's Report — 1966-67

The Nineteenth annual meeting of the Woman's Auxiliary to the North Dakota State Medical Association was held in Fargo at the Town House Motor Motel at 9:30 a.m., Saturday, April 30, 1966, with Mrs. M. A. K. Lommen, State Auxiliary President, presiding.

Official minutes are recorded in the Journal-Lancet and filed with convention programs, lists of officers, committee chairmen, district presidents, and councilors in the archives.

The Fall Board Meeting was held at Mac's Cafe in Jamestown on Saturday, October 8, 1966, with Mrs. E. O. Hieb, State President, presiding. Mrs. Wendall Roller, North Central Regional Chairman to A.M.A.E.R.F. was the honored guest. Minutes of the meeting are filed in the archives.

Honored guests at the State Convention were: Mrs. Willard C. Scrivner, North Central Regional Woman's Auxiliary Vice-President; Dr. Joseph D. Craven, President of the State Medical Association; and Dr. Glenn W. Toomey, President-Elect of the Association.

Membership in the Woman's Auxiliary this year totals 333 with 1 honorary state member.

Registration for 1966 was 92.

Clippings from the various districts, as well as copies for the year of *News, Views and Cues*, have been placed in the files.

Margaret Hanewald, *Historian*

## A.M.A.E.R.F.

An initial packet was sent out last fall emphasizing the fund raising ideas for the A.M.A.E.R.F. priority projects. Our president, as she visited each of the districts, urged the support of A.M.A.E.R.F. and the Biomedical Research Foundation. Contributions this year total $1,738.50. This money was raised by memorials, a benefit ball, rummage sale, picture raffle, and direct contributions. Increase over last year was $235.60.

We are close to our $5.00 per capita goal; it is $4.96 per member this year.

| *DISTRICT* | *MEMBERS* | *TOTAL AMOUNT* | *PER CAPITA* |
|---|---|---|---|
| 1 | 83 | $ 380.00 | $4.57 |
| 2 | 16 | 140.00 | 8.75 |
| 3 | 55 | 304.00 | 5.52 |
| 4 | 41 | 158.00 | 3.85 |
| 5 | 8 M.A.L. | — | — |
| 6 | 63 | 350.00 | 5.55 |
| 7 | 28 | 140.00 | 5.00 |
| 8 | 17 | 85.00 | 5.00 |
| 9 | 26 | 80.00 | 3.07 |
| 10 | 12 | 74.00 | 6.16 |
| Cards | | 2.50 | |
| N.D. Auxiliary | | 25.00 | |
| | | $1,738.50 | |

Largest per capita contribution: District 2 — $8.75; Greatest increase over last year: District 2; Largest contribution: District 1.

All but $30.00 is designated for the University of North Dakota.

Mrs. R. D. Schoregge, *Chairman*

## Health Careers Report — 1966-67

*Fargo (District 1)*

No communication received from this district.

*Devils Lake (District 2)*

They reported no Health Careers activities.

*Grand Forks (District 3)*

No report.

*Minot (District 4)*

They have an active Candy Striper program here, but we received no current report.

*Valley City (District 5)*

Unorganized auxiliary.

*Bismarck-Mandan (District 6)*

*Mandan.* Only 1 meeting was held in October to tour the operating room. Two appeals were made to the 6th District Medical Auxiliary for additional support with no response. So the advisor had to discontinue her duties while the Candy Striper Program in the Mandan Hospital was run strongly against her wishes and is still doing so with no present connection to the 6th District.

*Bismarck.* The State Health Careers Rally was held in Bismarck on Sept. 17, 1966, at Boniface Hall, St. Alexius Hospital. One hundred and four students and 14 adults attended the rally from Jamestown, Mott, Dickinson, Minot, Washburn, Mandan, and Bismarck. The North Dakota Health Council financed the rally and the 6th Medical District Auxiliary furnished cookies and punch. Lunch was held at the Annunciation Priory and a program of approximately 8 careers was covered during the buzz sessions and movies. The Bismarck Medical Career Club has a membership of 20 and they have met bimonthly under advisorship of your state careers chairman for the following programs: a panel on nursing, crippled children, pediatrics, X-ray, psychiatry, physical therapy, and obstetrics. They sold Easter lilies and made 45 Valentine tray favors for the pediatrics departments of both hospitals. They also went Christmas caroling through the hospital.

They held a hot dog and coke sale for 15¢ to raise funds to attend the next state rally. A $30.00 profit was realized.

*Jamestown (District 7)*

The Jamestown High School has an active Medical Careers Club with 35 members and future Candy Stripers will boost the membership to over 50. Their field trips have included tours of the Crippled Children's School, the Eddy Funeral Home, tours of the 2 local hospitals, and a film on Natural Childbirth. Eight members with their advisors attended the State Rally in Bismarck.

Eighteen new Candy Stripers were trained early this year with 16 ready for training in May.

The Club's projects have included making holiday favors for hospital patients, Christmas caroling to shut-ins, assisting students at the Crippled Children's School by washing and setting the girls' hair, taking them to movies, assisting with residential drives, and holding bake sales and car washes.

A doctor has been appointed by the Stutsman County Medical Society with hopes of arranging tours and discussions for the young men attending high school. They also have a Health Careers club formed, but sent no current report.

*Williston (District 8)*

Due to a scattered membership they report no Health Career activities.

*Southwest (District 9)*

The Medicorps of Mott has an active membership of 25 girls. They are awarding a $100.00 Nursing scholarship this year. Their other annual projects include fund drives for the Association for the Blind and Home on the Range under the community leadership of the local optometrist and the Knights of Columbus. Some of the careers they investigated this year have been nursing, dental hygiene, speech therapy, and physical therapy. This group has attended the State Rallies. Mrs. R. E. Hankins has been the advisor for nine years and she is also currently the North Central Regional Health Careers Chairman.

*Traille-Steele (District 10)*

They pursue no special projects.

Mrs. Paul Klosterman, *Chairman*

## Mental Health Report — 1966-67

As Mental Health Chairman, I began our year early by distributing a packet of current literature to each District at our convention in Fargo. The idea was that they could have a head start on this year's program. Many new ideas for programs were included in this packet.

Although as an Auxiliary we have not carried out any 1 program in great detail, as individuals we have all participated in many facets of Mental Health.

One of our biggest and most active programs has been working for the establishment of Community Mental Health centers throughout the state. Presently there are 2 centers: 1 operating in Grand Forks and 1 in Bismarck. Another 2 shall begin operation in the early summer: 1 in Fargo and another in Minot.

Mrs. S. J. Thakor, *Chairman*

## Legislative Report — 1966-67

1966-67 saw elections with a major victory won for those interested in maintaining our 2 party system. Then our thoughts turned to the present day legislation and its effect on the medical profession.

Our efforts went to keep in touch with our legislators and encourage them to take a second look at all health care bills passed in the 89th Congress.

Our next efforts should be in helping educate our youth in high schools, colleges, and medical schools. We can offer to help the youth organizations already established by the Republican and Democratic Parties. We can offer to furnish them with our educational materials and provide speakers for their meetings and school assemblies.

Mrs. Chris Christu, *Chairman*

### International Health Activities

All districts again participated in I.H.A. by bringing their drugs, soap, bandages, and hospital gowns to the Convention. Mrs. Ralph Tarnasky of Bismarck and the committee packed 32 cartons weighing 624 lbs. and shipped them to World Medical Relief in Detroit, Mich. Shipping charges were $33.27.

Mrs. James V. Miles, *Chairman*

### Safety Committee Report

As State Safety Chairman, I had the privilege of attending the Injury and Accident Prevention meeting in Bismarck this year. I was so happy that I took the time to go, because it was a most interesting and informative conference.

There is much to be done in the area of farm and home accidents, accidental poisoning, automobile accidents, and the deaths resulting from them. The information on how to help prevent these accidents is available; the desire of the public to take the necessary precautions is lacking. We can contribute a great deal by helping the various agencies to get the information where it will do the most good.

I had the opportunity of taking the National Safety Council's Defensive Driving Course. This would be of great help to anyone who drives a car. It would especially aid those who are new drivers and have not yet established bad habits. I recommend that each district take this course when possible, or sponsor it in their community. I also recommend that each district work to see that the Defensive Driving Course be given to high school students along with their regular driving education courses. Such a course was sponsored by I district in May and another is scheduled within the next few month.

I can report that I learned a great deal during the year, and I sincerely hope that you will choose to work for a safer state in the areas described. You have heard it before, but it is so true: "The life you save may be your own."

Mrs. Kenneth Amstutz, *Chairman*

### State Publicity Report

In early March a questionnaire was sent to each District Councilor or Publicity Chairman requesting information regarding publicity for 1966-67.

Of the 9 sent out, 6 were returned. All reported good coverage of their regular meetings. Grand Forks and Fargo reported publicity for a dance or ball, including pictures. Grand Forks received publicity for distribution of Diabetic Packs. Sixth District had notices of their assistance at Immunization Clinics. Three Districts are either small or social groups only and have had little publicity other than for regular meetings.

All Districts report that the local newspapers have been cooperative. Coverage has been rated good to excellent.

News was sent in by the District President, the Councilor, or Publicity Chairman depending on the size of the District.

No T.V. or radio coverage was received.

At the suggestion of Mrs. D. M. Barnard of Fargo, an interesting clipping from the Sunday *Fargo Forum* regarding Mrs. Mark Lane was forwarded to *M.D.'s Wife*. This has been acknowledged by Mrs. Kathleen Getz. We are hopeful it will be included in the magazine in the near future.

Local daily newspapers have been notified of the State Convention in Bismarck May 5, 6 and 7. Releases will be given to them through the Chairman and Lyle Limond's office. Papers throughout the state will also be sent releases. Pictures have been arranged depending on time and space.

My sincere thanks to Mrs. Delano Pfeifle who graciously agreed to assume my duties on very short notice.

Mrs. R. O. Saxvik, *Chairman*

### Community Service Report — 1966-67

Because of the geography of North Dakota and its relatively small population, our state was divided into districts rather than counties in organizing medical societies and their auxiliaries. For the same reason, the auxiliaries often do not have a large number of members and the membership seems reluctant in many cases to undertake community service projects on their own. This does not mean that auxiliary members are not most generous in giving of their time and talents to their communities!

First District (Fargo, the largest) has for a number of years provided the refreshments for a Senior Citizens' Group of 60-80 members which meets twice monthly at the YWCA. This year several members assisted the Junior League in conducting a Preschool Medical Vision and Hearing Survey of 4-year-olds. A committee has recently been appointed to study the possibility of beginning a Homemakers' Service in Fargo. One member, who is Safety Chairman on the PTA Council, has requested a copy of the Block Mother Program for study. Other members are active in 3 hospital auxiliaries, community theater, 2 art centers, and church and youth activities.

The Sixth District in Bismarck assisted the City Nurses in their Immunization Clinics as their Community Service Project this year. Mrs. Robert Kling of the Auxiliary is Community Service Chairman for the Bismarck Community Council. Clinics were held November, December, January, and March. They were held during the morning and afternoon and the children received D.P.T., Smallpox, Sabin Vaccine, and Measles Vaccine according to their needs. Some 600 children were immunized at each series. March 18th over 700 children were immunized for measles. Other activities of these members included working through the Red Cross Disaster Nurse Committee to send 255 Santa Claus ditty bags to Viet Nam.

The auxiliary in Jamestown prepared Christmas baskets for 3 needy families. These included clothing, food, and new gifts for 28 children in these families. They also cosponsored with the Dental Wives, a Senior Citizens' party in April and sponsored the showing of "A Quarter Million Teenagers," an educational film on V.D., to 1,500 students in the public school system.

In Williston the auxiliary takes an active part in the local Red Cross Blood Bank and 1 member is chairman of the Red Cross program for Williams County.

In Grand Forks, auxiliary members work as volunteers at the Medical Rehabilitation Center.

Statewide, although the auxiliaries themselves may not sponsor many community service projects, their members are very active in service groups and in giving of their individual talents. There are few doctors' wives who are not busy in their hospital auxiliaries, in church activities, P.T.A. groups, 4-H Clubs, and other youth groups. They help to man the various community drives for funds. . . . United Fund, Community Chest, Heart Fund, Cancer Drive, March of Dimes. They are active in the fields of art, drama, music, and study clubs. They are indeed a busy group of women!

Various of the Package Programs prepared by the Woman's Auxiliary to the American Medical Association will be displayed at the state convention in May. Hopefully, the Presidents and the Community Service Chairmen will find ideas and materials which may be of use to them during the coming year.

MRS. MACK TRAYNOR, *Chairman*

### News, Views and Cues — Managing Editor

Copies of *News, Views and Cues* were issued in October, January, and April. Most districts contributed; however, total representation has continued to be a goal and not a reality.

Content of our Auxiliary paper included national and state news, the president's reports, committee reports, and all of the activities within each auxiliary.

This year again we followed our outline in the following sections: meetings and auxiliary projects, membership, community service, progeny, illnesses, in memoriam, travelogue, and miscellany.

We continue to hope for reports and information from our newsy people without whom *News, Views and Cues* would not be complete. We appreciate your interest and support and always welcome your suggestions for a better paper.

MRS. JAMES R. OLSON, *Managing Editor*

### News, Views and Cues — Business and Circulation

The fall issue of *News, Views and Cues* was mailed in October 1966 to approximately 340 state auxiliary members, editors of publications in the other 49 states, the AMA office, and several national officers. The cost of this publication was $79.96 and was payable to Quality Printing in Grand Forks.

After waiting nearly six weeks (punctuated by numerous calls to the printer) for this issue to be completed, we felt we should obtain a printer who would give us prompter service. With this change our printing cost increased but the time decreased to less than two weeks.

The first issue of 1967 was mailed in February to the above number of persons. The bill for this issue was $114.34 and was payable to Jet Printing, Grand Forks.

The preconvention issue was mailed in April to the above number of persons. This bill has not yet been received.

Postage for the mailing of this publication is paid by Blue Shield.

MRS. JOHN M. LAMBIE,
*Business and Circulation Manager*

### Financial Statement May 1, 1966 - May 2, 1967

| | | |
|---|---|---|
| May 1, 1966, Balance on Hand | $1,040.64 | |
| Dues: | | |
| 347 National | 1,735.00 | |
| 2 Past Dues 1965-1966 | 10.00 | |
| Bank Certificate Int. 6/30/66–3/31/67 | 45.00 | |
| Balance Fargo Convention Receipts | 97.50 | |
| Overpaid Dues (Valley City) | 5.00 | |
| | | $2,933.14 |
| Disbursements: | | |
| Mrs. E. O. Hieb, President | | |
| National Convention 1966 | $ 250.00 | |
| Chicago Conference 1966 | 125.00 | |
| Yearly Expenses 1966-1967 | 125.00 | |
| Mrs. Pray: President-Elect | | |
| Chicago Conference | 125.00 | |
| National Treasurer | 698.00 | |
| Miscellaneous Fund: | | |
| R.E.A. Express (Mailed Medicine) | 36.83 | |
| Mrs. R. Berg (Postage 1962-1966) | 40.95 | |
| Mrs. P. Klosterman (Health Careers Exp.) | 2.75 | |
| Mrs. Thakor (Mental Health Exp.) | 3.25 | |
| Mrs. Lommen (Past President Exp.) | 16.32 | |
| Bismarck Tribune (Stationery) | 39.26 | |
| Maplewood Bookbindery | 3.68 | |
| Mrs. R. Berg (Telephone) | 2.59 | |
| Mrs. V. Fischer (Postage) | 3.53 | |
| Dr. Jensen (Valley City Overpaid Dues) | 5.00 | |
| News Views and Cues | 315.76 | |
| North Dakota Council–Health Careers | 5.00 | |
| WASAMA | 100.00 | |
| A.M.A.E.R.F. | 25.00 | |
| Past Presidents Pins | 73.19 | |
| | | $1,996.11 |
| May 2, 1967, Balance on Hand | | 937.03 |
| Bank Certificate—Dakota National Bank, Bismarck | | $1,000.00 |
| Combined Balance on Hand May 2, 1967 | | $1,937.03 |

### Budget — 1967-68

| | | |
|---|---|---|
| Balance on hand in checking account, May 2, 1967 | $ 937.03 | |
| Bank Certificate | 1,000.00 | |
| | | $1,937.03 |
| Assumed Income— | | |
| Dues—based on 350 members | 1,050.00 | $1,050.00 |
| | | $2,987.03 |
| President's Fund: | | |
| National Convention | $ 250.00 | |
| Chicago Conference | 125.00 | |
| Expense Fund | 125.00 | |
| | | $ 500.00 |
| President-elect's Fund: | | |
| Chicago Conference | $ 125.00 | $ 125.00 |
| Other Funds: | | |
| Committee Chairmen | $ 60.00 | |
| News, Views and Cues | 315.00 | |
| Past-Presidents Pins 1/6 of $73.19 for 6 pins) | 12.19 | |
| A.M.A.E.R.F. | 25.00 | |
| WASAMA | 100.00 | |
| Miscellaneous Fund | 50.00 | |
| Postage for I.H.A. (Samples etc.) | 50.00 | |
| | | $ 612.19 |
| Total Expense Funds | | $1,237.19 |

### Medical Student Loan Fund Report

At the State Convention in Fargo in May 1966 2 changes were made in the By-Laws of the Student Loan Fund. Mrs. E. O. Hieb moved that the $25.00 minimum balance in the Medical Auxiliary Student Loan Fund (as per original agreement) be eliminated. The motion was seconded and carried. Mrs. Hieb also moved that a loan granted to a student shall be due one year after completion of his or her internship. Motion was seconded and carried.

### District Reports

| | | |
|---|---|---|
| 1st District, Fargo | 83 members | $700.00 |
| 2nd District, Devils Lake | 16 members | 120.00 |
| 3rd District, Grand Forks | 55 members | 600.00 |
| 4th District, Minot | 41 members | 350.00 |
| 5th District at Large Valley City | 8 members | |
| 6th District, Bismarck | 63 members | 630.00 |
| 7th District, Jamestown | 28 members | 280.00 |
| 8th District, Williston | 17 members | 10.00 |
| 9th District, Dickinson | 26 members | 50.00 |
| 10th District, Traill-Steele | 12 members | 24.00 |
| TOTAL | 348 members | $2,764.00 |

### Woman's Auxiliary Loan Fund Report

For the period January 1, 1966, to December 1, 1966

| | | |
|---|---|---|
| NET WORTH: | | |
| Notes Receivable | $35,621.03 | |
| Cash (Deficit) | 716.51 | |
| TOTAL | | $34,904.52 |
| EXPENDITURE REPORT: | | |
| Cash Balance, January 1, 1966<br>Deficit | | ($617.17) |
| Add Receipts: New Funds<br>Mrs. M. H. Poindexter | $ 2,620.00 | |
| Principal | 5,596.59 | |
| Interest | 184.07 | |
| Total Receipts | | $ 8,400.66 |
| Less Expenditures | | 8,500.00 |
| Deficit Cash Balance, December 31, 1966 | | $ 716.51 |

In the calendar year of 1966, we loaned $8,500 to 18 students.

### Resolution

WHEREAS, the ladies of the Woman's Auxiliary to the North Dakota State Medical Association, through devoted enthusiasm and continuous efforts over the years have contributed diligently to the Medical Auxiliary Student Loan Fund of the Medical School of the University of North Dakota, and more recently to the Americal Medical Association Education and Research Fund, and

WHEREAS, these funds have enabled many medical students to complete their medical education, and

WHEREAS, the local Auxiliary Societies throughout the State have participated in many other commendable projects which reflect credit to their organization and to the Medical Profession,

NOW, THEREFORE, BE IT RESOLVED that the House of Delegates of the North Dakota State Medical Association convey to the Woman's Auxiliary our appreciation and thanks for their excellent work, and

BE IT FURTHER RESOLVED that a copy of this Resolution be directed to Mrs. Edwin O. Hieb and her successor.

Adopted unanimously May 7, 1967, Second Session of the House of Delegates, 80th Annual Meeting, North Dakota State Medical Association.

### Report of Nominating Committee

The following Slate of Officers is to be presented to the Convention, May 6, 1967:

President, Mrs. Lawrence G. Pray (Helen), First District

President-Elect, Mrs. Harold Evans (Jackie), Third District

First Vice-President, Mrs. Carl B. London (Virginia), Fourth District

Second Vice-President, Mrs. Sushen J. Thakor (Peg), Sixth District

Recording Secretary, Mrs. Paul Ahlness (Peg), Ninth District

Treasurer, Mrs. Warren L. Macaulay (Dorothy), First District

Mrs. M. A. K. Lommen, *Chairman*

### Auxiliary President's Report — First District

The First District Medical Auxiliary held 4 luncheon meetings this year. We have 83 members and the average attendance at meetings is 45.

The fall meeting was devoted to orientation and a discussion of the importance of our Student Loan Fund and A.M.A.E.R.F. For the program, Mr. Robert Kjorlein, director of the new Red River Art Center, told us of the Center's plans and asked for our support. Mrs. Edwin Hieb was our guest at the November meeting. She reported on the Chicago Fall Conference. In February, Mr. Cyrus Running, chairman of the art department at Concordia College, gave an entertaining satire about music. For our last program, Mrs. Lou Marget (Carole) talked to us about the importance of culture in the community and gave a short reading. At our last meeting we also enjoyed the company of 3 interns' wives as our guests.

Our Auxiliary has had an active year. Our Benefit Ball, "Tijuana Holiday," was fun and a financial success. Our contribution to A.M.A.E.R.F. was $380.00 and to the Student Loan Fund $700.00.

Mrs. Thomas Hamilton, Paramedical chairman, has distributed literature to all of the local high schools. Our Community Service project, chairmaned by Mrs. Stanley Thompson, has provided desserts donated by auxiliary members to the Senior Citizens' bimonthly meetings. About 80 Senior Citizens attend the meetings. Mrs. Donald Barnard has been one of their faithful drivers for several years. For International Health Activities the committee, chairmaned by Mrs. Douglas Lindsay, are collecting and packaging drugs and rolling bandages made from sheets. Mrs. S. C. Bacheller introduced the leper bandage project to the Enderlin community. Mrs. B. F. Amidon, Safety chairman, has studied the safety driving material. This program is already established in Fargo but our members will encourage it and give it publicity. Mrs. Chris Christu has kept us informed of important legislation.

Several of our members are active in many community services such as: The Opportunity School, hearing clinics for preschool children, community theater, Red River Art Center, and hospital auxiliaries, just to mention a few.

The new officers are:

President, Mrs. J. B. Wenzel (Nancy); Vice-President, Mrs. Albert Kohlmeyer (Marion); Secretary, Mrs. Dale C. Kane (Lo Ann); Treasurer, Mrs. Donald Lamb (Mary).

Mrs. L. G. Pray, *President*

### Auxiliary President's Report — Second District

The Devils Lake District Medical Auxiliary held 4 business meetings during the past year. At our November meeting we had the honor of having our state president, Mrs. Edwin Hieb, as our guest. At the February meeting we enjoyed slides of the 1966 Peace Garden Band Tour to Europe by Mrs. Merton Utgaard of Bottineau.

A donation of $120.00 was made to the A.M.A.E.R.F. and $140.00 to the Student Loan Fund.

Our district has 33 wives of which 16 are paid members. The district is so widely scattered that we were unable to do any community service as a group, but many are active in their local community affairs.

Our new officers for 1967-68 are:

President, Mrs. Jon V. Eylands; Secretary-Treasurer, Mrs. Duane Glasner.

Mrs. C. R. Miller, *President*

### Auxiliary President's Report — Third District

The Grand Forks Third District Medical Auxiliary has 55 members in good standing.

We held 4 meetings during the 1966-1967 year.

Our first meeting was a luncheon held at the home of Mrs. William Keig on October 20, 1966, with the state president, Mrs. Edwin O. Hieb, as our honored guest. Mrs. Hieb gave us an informative talk on the Chicago Convention and on Auxiliary projects and goals. Mrs. Russell Wilson, an auxiliary member, was our soloist.

Our second meeting was held November 17, 1966, at the home of Mrs. William Powers with Dr. Powers as our guest speaker. He gave us a very interesting program on "Why Sex Education."

Our third meeting was held January 19, 1967, at the home of Mrs. T. Q. Benson with Mrs. Walter Wasdahl, an auxiliary member, giving us a very interesting and eye-opening view of her husband's experience as medical missionary and Fulbright Student in Africa and Malaysia. She illustrated this with slides and snapshots.

Our fourth meeting was held at the home of Mrs. Douglas Doss with Mr. Charles Searle, Executive Vice-President of the Chamber of Commerce giving us a fascinating view of "Grand Forks, The Fastest Growing City in North Dakota." Annual reports were given and new officers were elected. A surprise farewell and gift was given to Mrs. G. G. Thorgrimsen, a past district and past state president, who is leaving the state.

Our auxiliary as a group has been active. Several members do volunteer work at the Rehabilitation Center at the University. Diabetic packs were distributed in November to business places, the university, and to both hospitals. We again have sponsored a child at the Valley Day Care Center by paying tuition for 1 child for one year.

Our A.M.A.E.R.F. donation as of April 19, 1967, was $304.00. This is an increase from previous years.

Our Student Loan Fund Benefit Dance was held April 14, 1967, at the Westward Ho. Our contribution of $600.00 was sent to the student loan fund chairman.

We collected our own dues this year which was less confusing.

This has been a rewarding year for me as president. Our student loan fund dance was successful as the contribution indicates and I am pleased about our A.M.A.E.R.F. increase. This is all due to a working auxiliary.

Mrs. George A. Wilson, *President*

### Auxiliary President's Report — Fourth District

In concluding my term as President of the Northwest District I am struck by 2 thoughts.

I am grateful for a moderately successful year regarding finances and membership.

I am sorry I have been unable to generate as much enthusiasm among our members as I feel the organization deserves.

I decided to use the third object under Article II of the By-Laws as my theme for the year just completed, to wit:

To cultivate friendly relations and promote mutual understanding among physicians' families.

Accordingly, I reached each of our members by letter explaining our goal and purpose and extending a welcome to all members and potential and associate members.

On the plus side I feel we all know each other just a little better than a year ago, due to the fact that our first meeting was entitled "getting to know you" and each member gave a thumbnail sketch of herself, background, education, and interests.

Our membership has reached 41. We have contributed $340.00 to the Student Loan Fund.

We have, though in a small way, made a contribution to A.M.A.E.R.F.

We have in a small way contributed to our local hospital auxiliaries.

Many of our members take an active part in civic affairs.

We will make a financial contribution to a local charity. The members will decide the recipient and the amount at the next meeting, scheduled for April 20.

I have enjoyed my year as President and hope I have contributed to the well-being of the auxiliary in some small way.

Mrs. William C. Hurly, *President*

### Auxiliary President's Report — Sixth District

Prior to our first meeting, a tea was held by the elected officers to which all prospective members were invited. A calling committee contacted wives of all doctors in the district to encourage attendance and membership. The secretary sent a card to those living outside Bismarck.

During the year we had 4 meetings. Three of these were dinner meetings held at the same time as the 6th District Medical Association. The final meeting was a luncheon at which convention plans were finalized.

Our first meeting was October 19, 1966. New committee chairmen reported on their respective roles and projects. Mr. Job York of the North Dakota State Board of Health presented a program on Injury Prevention in the Home. Several of our members later attended a workshop on Accident Prevention headed by Mr. York at the Municipal Country Club on November 1.

At our Christmas meeting, December 6, a sextet from the Priory entertained us with Christmas carols. Our state President, Mrs. Edwin Hieb, and President-elect, Mrs. L. G. Pray, were present. Both brought greetings and expressed enthusiasm for the various Medical Auxiliary goals for the year. Following this, we raffled off an oil painting donated by Dr. Russell Saxvik. Proceeds of the raffle went to the A.M.A.E.R.F. Fund.

In February we were invited by our husbands to a joint dinner meeting at the K.C. Club. The guest speaker was Mr. Harkness, administrator for the Heartview Foundation.

The last meeting of the year was a luncheon and installation of new officers. Mrs. Phil Dahl presented plans for the state convention to be held here in Bismarck in May.

Special projects included helping with the ParaMedical Careers Rally at Mary College in September, assisting at several immunization clinics held by the County Health Association, and a rummage sale in February. Mrs. William Buckingham was in charge of the latter and proceeds went to A.M.A.E.R.F. At the time of this report we are tentatively set to sponsor a course in May on Defensive Driving. It will be under the direction of the State Board of Health, Accident Prevention Division.

New officers for the coming year are Mrs. Roger Fricke, President; Mrs. Albert Fortman, Vice-President; Mrs. Gilberto Gonzalez, Secretary; and Mrs. Delano Pfeifle, Treasurer. Delegates to the State Convention are Mrs. Thakor, Mrs. Lommen, and Mrs. Jerry Knudsen. Mrs. Thakor will be councilor for the next three years.

The officers for 1966-1967 were Mrs. Charles A. Hamilton, President; Mrs. Roger Fricke, Vice-President; Mrs. Albert Fortman, Secretary; and Mrs. Gilberto Gonzalez, Treasurer.

There were 6 State Board members from Sixth District. They are Mrs. Robert Schoregge, A.M.A.E.R.F.; Mrs. Paul Klosterman, Health Careers; Mrs. Sushen Thakor, Mental Health; Mrs. M. A. K. Lommen, Nominating; Mrs. Clyde Smith, Parliamentarian; and Mrs. James Moses, Student Loan.

Sixth District has 61 members, has contributed $315.00 to A.M.A.E.R.F., has advanced $630.00 to the Student Loan Fund, University of North Dakota School of Medicine, and also hosted the ParaMedical Careers Rally. We also gave $15.00 to the Elks Crippled Children's Fund.

Our sincere sympathy is extended to Dr. Norvel Brink and children in the passing of Mrs. Brink (LaVina) on June 17, 1966.

The officers, special committees, and calling and decorating committees worked very well together and I wish to thank them all for their efforts. Also, I want to add a special thank-you to Marion Buckingham for her efforts for A.M.A.E.R.F. and Vivian Dahl, who graciously accepted the convention chairmanship.

Mrs. Charles Hamilton, *President*

### Auxiliary President's Report — Seventh District

The 4 meetings of the Seventh District Medical Auxiliary were divided into 2 morning meetings, 1 dinner meeting, and 1 luncheon meeting. Our 100% membership this year numbered 28 plus 1 honorary member. At the April luncheon meeting we were delighted to have as guests 2 doctors' wives who are Auxiliary members-at-large from Valley City.

Our Medical Careers Club has been very active again this year with a membership of 35. The big program for them has been the Candy Stripe training session and working in the hospital. The Pinning Tea will be held May 14th at Central Dakota Nursing Home. Mrs. Philip Curtis has been the Auxiliary Advisor this year. The Auxiliary will assist with the tea, has given a donation of money, and chauffered the girls at Christmas to sing carols to shut-ins in private homes about the city.

The annual Christmas Basket project was enlarged this year to include 3 families who had a total of 28 children! Our membership donated food, clothing, and new gifts.

On April 29th we will sponsor the Senior Citizens party. This too has grown so we expect to have 135 or more guests. We furnish rides, prizes, entertainment, refreshments, and fellowship.

Our newest project was inducing the School Board to allow the film "One-Quarter Million Teenagers" to be shown in the physical education classes in our public high school with a physician in attendance. Fifteen hundred students in 8th through 12th grades viewed the film.

Our anticipated project of sponsoring a "Defensive Driver Course" did not materialize as Fargo has been using the teaching kit that belongs to the Farmers Union in Jamestown. We hope to set it up this summer or next fall.

At the February dinner meeting we had as guest speaker, Doctor G. Swafford, who spoke on his work in Honduras last summer. His slides and remarks on this worthwhile work were very interesting.

We contributed $10.00 per member to the Student Loan Fund and $5.00 per member to A.M.A.E.R.F. — a total for 1966-67 of $420.00.

New officers for 1966-67 are:

President, Mrs. Thomas Pederson; Vice-President, Mrs. Gerald Swafford; Secretary-Treasurer, Mrs. O. P. Erickson; Councilor, Mrs. John Swenson.

Mrs. John Beall, *President*

### Auxiliary President's Report — Eighth District

The Eighth District is an inactive one because of our few members and the fact some of them live 40 to 80 miles from Williston. However, we do take pride in having 100% membership.

Our State President, Mrs. Hieb, visited us in February and gave us several helpful suggestions and answered many of our questions.

Our Auxiliary members are all involved separately or in various other groups in all Community projects such as Community Chest, Cancer Drive, Heart Fund, and both political parties. One of our members is the chairman for the Red Cross Blood Bank and has done an excellent job in going over the quota each time. Just about every member works in some capacity or other for this cause.

We are also active in both Auxiliaries to the hospital and 2 members are holding executive offices.

There are also Auxiliary members on the Board of Directors for the Community Concert and Dinner Club.

We enjoy a joint social meeting with our husbands 3 or 4 times a year. We have also been invited to stay for their scientific program and have done so if the topic is of interest.

The Eighth District members will look forward to a visit from our new State President during the coming year.

Mrs. Joseph D. Craven, *President*

### Auxiliary President's Report — Ninth District

We did not have a meeting during the past year. We did pay our dues and made a contribution to the Student Loan and A.M.A.E.R.F.

Mrs. Andrew C. Sawchuk, *President*

### Auxiliary President's Report — Tenth District

Our officers will continue serving another year. We have 11 members in our auxiliary and we meet approximately 4 times a year. We are a social group and don't try to carry out major projects of any size as we are scattered from Hillsboro to Cooperstown.

Our contribution was $22.00 each to A.M.A.E.R.F., and the Student Loan Fund. Dr. and Mrs. McLean contributed $50 to A.M.A.E.R.F., which we included at the same time.

Mrs. R. Kloster, *President*

### Registration Report – Convention of 1967

Note to Credentials Chairman: Fill in the number of those entitled to vote and registered, and give to the President, prior to the business portion of the 1st and 2nd sessions. Leave the space for the figures of the Registration Chairman, and the spaces under "Present" for the Secretary to fill in.

Note to the Registration Chairman: The report of the total number of members and guests registered is announced by the Chairman at the close of the 2nd Session. Her figures are added to this report by the Secretary, who attached Report to the Minutes.

Voting Members

| *Entitled to Vote:* | *Registered:* | *Present:*<br>*1st Session* | *2nd Session* |
|---|---|---|---|
| Executive Board | 21 | 21 | |
| Delegates | 11 | 11 | |
| Voting Body Total | | 32 | |
| Alternates: | | | |
| Quorum: ⅓ voting body | | | |

(signed) ____________________
Credentials Chairman

(signed) ____________________
Recording Secretary

| | *Total Registration* |
|---|---|
| Number of Members registered.......... | 61 |
| Number of Guests registered........... | 4 |
| Total in attendance.................... | 65 |

Mrs. James Moses, *Registration Chairman*

### 1967-68 Officers and Committee Chairmen

STATE OFFICERS:

President: Mrs. Laurence G. Pray (Helen), 1701 8th Street South, Fargo, North Dakota 58102.

President-Elect: Mrs. Harold Evans (Jackie), 2624 Olson Drive, Grand Forks, North Dakota 58201.

First Vice-president: Mrs. Carl B. London (Virginia), 506 Main Street South, Minot, North Dakota 58701.

Second Vice-president: Mrs. Sushen J. Thakor (Peg), 907 Griffin Street, Bismarck, North Dakota 58501.

Corresponding Secretary: Mrs. Frank Melton (Louise), 1702 7th Street South, Fargo, North Dakota 58102.

Recording Secretary: Mrs. Paul Ahlness (Peg), Bowman, North Dakota 58623.

Treasurer: Mrs. W. L. Macaulay (Dorothy), 1410 9th Street South, Fargo, North Dakota 58102.

COMMITTEE CHAIRMEN:

Membership: Mrs. Harold Evans (Jackie), 2624 Olson Drive, Grand Forks, North Dakota 58201.

Nominating: Mrs. Edwin O. Hieb (Pat), 211 Hillcrest Dr. N.E., Jamestown, North Dakota 58401.

Program: Mrs. Carl London (Virginia), 506 Main St., Minot, North Dakota 58701.

Parliamentarian: Mrs. Wayne LeBien (Evy), 75 Woodland Dr., Fargo, North Dakota 58102.

Liaison to WASAMA: Mrs. Thomas Shafer (Barbara), 2700 Olson Dr., Grand Forks, North Dakota 58201.

Historian: Mrs. Walter Hanewald (Margaret), 1043 5th Avenue W., Dickinson, North Dakota 58601

A.M.A.E.R.F.: Mrs. R. D. Saxvik (Elthea), 1243 West Highland Acres Road, Bismarck, North Dakota 58501.

Health Careers: Mrs. Wallace Nelson (Edna), 511 17th Avenue South, Grand Forks, North Dakota 58201.

By-Laws: Mrs. M. A. K. Lommen (Mary), 831 Griffin Street, Bismarck, North Dakota 58501.

Mental Health: Mrs. R. D. Kling (Harriet), 1414 Hannaford Avenue, Bismarck, North Dakota 58501.

Legislation: Mrs. Chris N. Christu (Arlen), 1509 5th Avenue South, Moorhead, Minnesota 56560.

Disaster Preparedness: Mrs. C. A. Hamilton (Dorothy), 1129 North Parkview Street, Bismarck, North Dakota 58501.

International Health Activities: Mrs. K. N. Amstutz (Doris), 412 8th Avenue Southeast, Minot, North Dakota 58701.

Safety: Mrs. Ronald Kloster (Jan), Mayville, North Dakota 58257.

Publicity: Mrs. Jens Sahl, Jr., 510 4th Avenue Northwest, Minot, North Dakota 58701.

Community Service: Mrs. Mack Traynor (Rita), 1310 9th Street South, Fargo, North Dakota 58102.

Official Publication: News Views and Cues.

Managing Editor: Mrs. J. R. Olson (Elinor), 1506 Chestnut Street, Grand Forks, North Dakota 58201.

District News Editor: Mrs. Rodney G. Clark (Carol), 511 18th Avenue South, Grand Forks, North Dakota 58201.

Business and Circulation: Mrs. John A. Lambie (Doris), 2721 Chestnut Street, Grand Forks, North Dakota 58201.

SPECIAL COMMITTEES:

Finance Committee: Mrs. R. G. Clark (Carol), 511 18th Avenue South, Grand Forks, North Dakota 58201, Chairman; Mrs. T. E. Pederson (Gen), 416 4th Avenue Northeast, Jamestown, North Dakota; Mrs. John Beall (Helen), 421 4th Avenue Southeast, Jamestown, North Dakota; Treasurer: Mrs. W. L. Macaulay (Dorothy), 1410 9th Street South, Fargo, North Dakota; Mrs. G. H. Hall (Ruth), 1748 9th Street South, Fargo, North Dakota.

Student Loan Fund: Mrs. Paul Breslich, 818 4th Street Southeast, Minot, North Dakota 58701, Chairman; Mrs. John Eylands (Barbara), 710 West Third, Rugby, North Dakota; Mrs. Paul Ahlness (Peg), Bowman, North Dakota; Mrs. J. F. Houghton (Jeanne), 1707 9th Street South, Fargo, North Dakota; Mrs. George Wilson (Evelyn), 510 18th Avenue South, Grand Forks, North Dakota.

Reading Committee: Mrs. O. V. Lindelow, 208 West Owens, Bismarck, North Dakota; Mrs. Jerry Knudson, 1143 East Coulee Road, Bismarck, North Dakota.

Resolutions: To be appointed by the Minot convention committee.

Nominations: Mrs. Edwin O. Hieb, 211 Hillcrest Drive Northeast, Jamestown, North Dakota, Chairman; Mrs. John Van der Linde, 1016 4th Avenue Northeast, Jamestown, North Dakota; Mrs. Walter Hanewald, 1043 5th Avenue West, Dickinson, North Dakota; Mrs. George Wilson, 510 18th Avenue South, Grand Forks, North Dakota; Mrs. O. A. Sedlack, 1019 9th Street South, Fargo, North Dakota.

Alternates: Mrs. Henry Kermott, 200 7th Avenue Southeast, Minot, North Dakota; Mrs. William C. Hurley, 6 Ninth Street Southeast, Minot, North Dakota; Mrs. Kenneth Amstutz, 412 8th Avenue Southeast, Minot, North Dakota; Mrs. Gale Richardson, 12 - 10th Street Southwest, Minot, North Dakota.

DISTRICT PRESIDENTS – 1967-68

First District: Mrs. J. B. Wenzel (Nancy), 1101 28th Avenue South, Fargo, North Dakota 58102.

Second District: Mrs. Jon Eylands, 710 West 3rd Street, Rugby, North Dakota 58368.

Third District: Mrs. Richard Helm (Ellen), 3330 East Elmwood Drive, Grand Forks, North Dakota 58201.

Fourth District: Mrs. Jens Sahl, Jr. (Elaine), 510 4th Avenue Northwest, Minot, North Dakota 58701.

Fifth District: Unorganized.

Sixth District: Mrs. Roger Fricke, 1943 Catherine Drive, Bismarck, North Dakota 58501.

Seventh District: Mrs. Thomas Pederson, 416 4th Avenue Northeast, Jamestown, North Dakota 58401.

Eighth District: Mrs. Joseph D. Craven (Margaret), 915 2nd Avenue West, Williston, North Dakota 58801.

Ninth District: Mrs. Harlan Larsen, 1005 5th Avenue West, Dickinson, North Dakota 58601.

Tenth District: Mrs. Ronald Kloster, Mayville, North Dakota 58257.

DISTRICT COUNCILORS – 1967-68

First District: Mrs. Donald Barnard (Margaret), 1212 7th Street South, Fargo, North Dakota 58102.

Second District: Mrs. J. Terlecki (Sophia), Minnewaukan, North Dakota 58351.

Third District: Mrs. Thomas Shafer (Barbara), 2700 Olson Drive, Grand Forks, North Dakota 58201.

Fourth District: Mrs. Samuel Shea, 808 1st Street Southeast, Minot, North Dakota 58701.

Fifth District: Unorganized.

Sixth District: Mrs. S. J. Thakor (Peg), 907 Griffin Street, Bismarck, North Dakota 58501.

Seventh District: Mrs. John Swenson, 240 12th Avenue Northeast, Jamestown, North Dakota 58401.

Eighth District: Mrs. Gordon Ellis (Jean), Northeast of City, Williston, North Dakota 58801.

Ninth District: Mrs. Walter Hanewald (Margaret), 1043 5th Avenue West, Dickinson, North Dakota 58601.

Tenth District: Mrs. Robert W. McLean, Hillsboro, North Dakota 58045.

## Financial Report of Convention

### Bismarck, May 5-6, 1967

| | | | | |
|---|---|---|---|---|
| RECEIVED: | | | | |
| North Dakota State Medical Association | | | $200.00 | |
| Registration Chairman: Edna Moses | | | | |
| 81 Luncheon tickets | @ $2.50 | $202.50 | | |
| 83 Registration | @ 1.00 | 83.00 | | |
| Daisy Fund | | 3.01 | 288.51 | |
| Sales of Daisy Pincushions – Betty Lindelow | | | 7.50 | $496.01 |
| EXPENDITURES: | | | | |
| Grand Pacific Hotel | | | | |
| 83 Luncheons | @ $2.00 | $166.00 | | |
| | Tax | 4.98 | | |
| | Tip | 24.90 | $195.88 | |
| Breakfast – 60 | @ $ .50 | 30.00 | | |
| | Tax | .90 | 30.90 | |
| Arikara Room – Coffee 2½ Gal. | @ $3.50 | 8.75 | | |
| | Tax | .27 | 9.02 | |
| Hospitality Room Coffee | | 5.50 | | |
| | Tax | .16 | 5.66 | |
| Total Grand Pacific Hotel Bill | | | $241.46 | $254.55 |
| Mrs. Glenn Sorlie, Daisy Plaque | | $ 10.00 | | 244.55 |
| Gervais Boy's Choir | | 25.00 | | 219.55 |
| Wiley Piano Company—piano rental | | 12.00 | | 207.55 |
| Vivian Dahl, Convention Chairman | | | | |
| Flower Pots | | 6.25 | | |
| 3 Glass Candle Holders | | .15 | | |
| Writing Pads | | 1.20 | $ 7.90 | 199.65 |
| Betty Lindelow, Luncheon Co-Chairman | | | | |
| 2½ Yds. felt | @ $ 1.29 | 3.30 | | |
| Cash tips G.P. Help | | 8.00 | 11.30 | 188.35 |
| Kathy Fortman – Nuts and Mints | | 3.00 | | 185.35 |
| Peg Johnson – 10 dozen Cookies | | 4.50 | | 180.85 |
| Star Printing Co. | | 7.50 | | |
| Luncheon tickets – 175 | Tax | .22 | 7.72 | 173.13 |
| Hoskins Meyer – 1 Bouquet | | 4.00 | | |
| 4 Corsages | @ $ 2.50 | 10.00 | | |
| | Tax | .42 | $ 14.42 | 158.71 |
| Campbell Floral – Centerpiece | | 8.00 | | |
| | Tax | .24 | 8.24 | 150.47 |
| Gaffney & Shipley | | | | |
| Invoice No. 11924 | | 35.32 | | |
| 11925 | | 8.43 | | |
| 12108 | | 3.48 | | |
| 12166 | | 9.16 | | |
| 12174 | | 6.96 | 63.35 | 87.12 |
| Balance forwarded to Auxiliary Treasurer, Mrs. R. M. Berg, Bismarck, N. Dak. | | | | $ 87.12 |

MARY E. LOMMEN, *Finance Chairman*

**The Membership Roster of the Woman's Auxiliary was printed in the October 1967 issue of The Journal-Lancet**

# DORSEY "FLU-GRAM"

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| Dextromethorphan hydrobromide | 30 mg. |
| Terpin hydrate | 180 mg. |
| Acetaminophen | 325 mg. |

Dosage: Adults—1 tablet, swallowed whole to preserve timed-release feature, in morning, midafternoon and at bedtime. Side effects: Occasional drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets. Precautions: The patient should be advised not to drive a car or operate dangerous machinery if drowsiness occurs. Use with caution in patients with hypertension, heart disease, diabetes or thyrotoxicosis.

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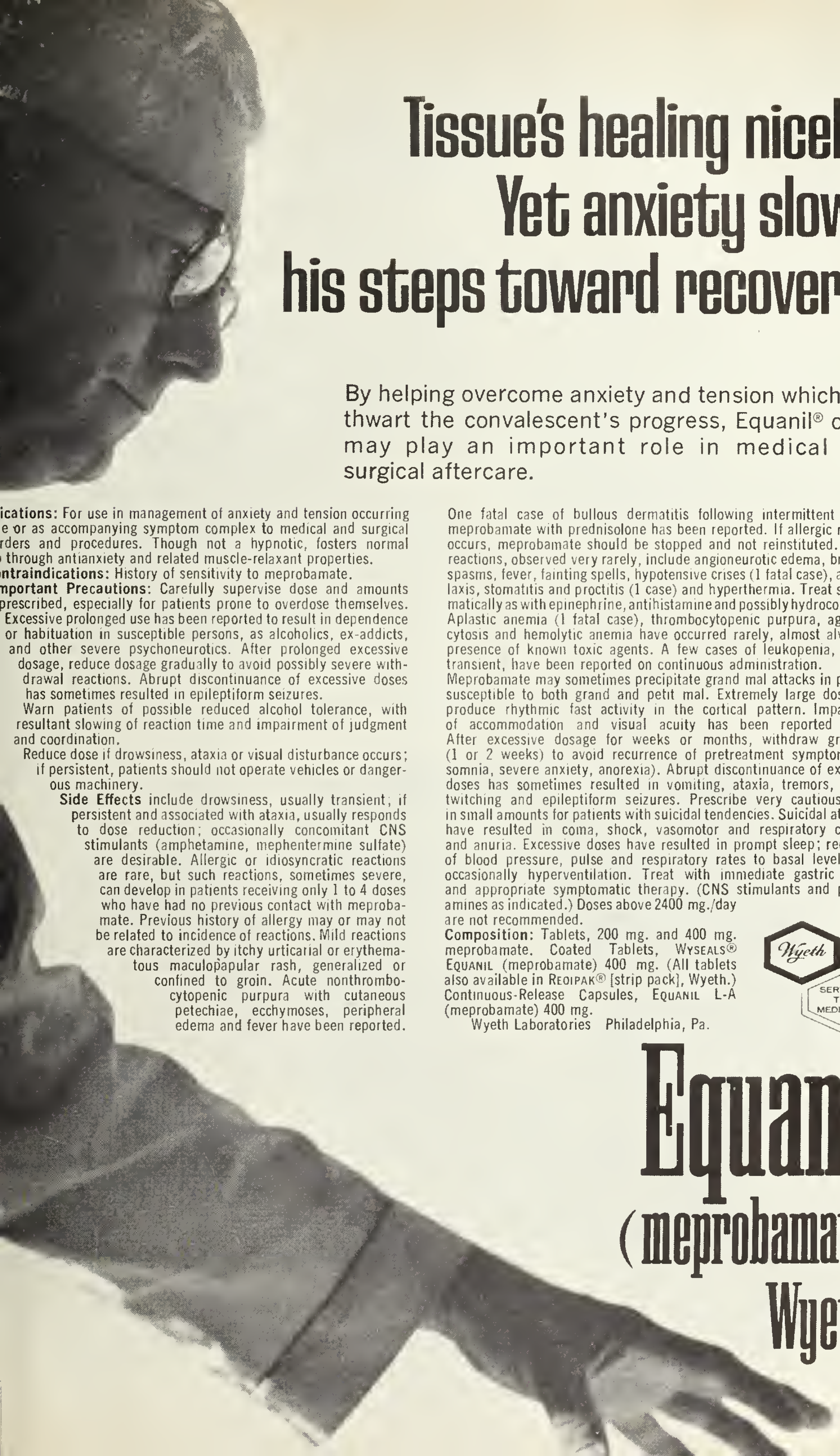

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**ntraindications:** History of sensitivity to meprobamate.
**mportant Precautions:** Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use has been reported to result in dependence or habituation in susceptible persons, as alcoholics, ex-addicts, and other severe psychoneurotics. After prolonged excessive dosage, reduce dosage gradually to avoid possibly severe withdrawal reactions. Abrupt discontinuance of excessive doses has sometimes resulted in epileptiform seizures.

Warn patients of possible reduced alcohol tolerance, with resultant slowing of reaction time and impairment of judgment and coordination.

Reduce dose if drowsiness, ataxia or visual disturbance occurs; if persistent, patients should not operate vehicles or dangerous machinery.

**Side Effects** include drowsiness, usually transient; if persistent and associated with ataxia, usually responds to dose reduction; occasionally concomitant CNS stimulants (amphetamine, mephentermine sulfate) are desirable. Allergic or idiosyncratic reactions are rare, but such reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Previous history of allergy may or may not be related to incidence of reactions. Mild reactions are characterized by itchy urticarial or erythematous maculopapular rash, generalized or confined to groin. Acute nonthrombocytopenic purpura with cutaneous petechiae, ecchymoses, peripheral edema and fever have been reported. One fatal case of bullous dermatitis following intermittent use of meprobamate with prednisolone has been reported. If allergic reaction occurs, meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. Treat symptomatically as with epinephrine, antihistamine and possibly hydrocortisone. Aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis and hemolytic anemia have occurred rarely, almost always in presence of known toxic agents. A few cases of leukopenia, usually transient, have been reported on continuous administration.

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# *News Briefs . . .*

## Minnesota

DR. VICTOR K. FUNK retired as director of the Hennepin County Chest Clinic after forty-one years as a tuberculosis specialist. He was succeeded by Dr. Thomas F. Mulrooney, former director of pulmonary diseases at Hennepin County General Hospital. Dr. Funk was voted an Outstanding Community Service Award by the Hennepin County Board "in recognition of distinguished service in behalf of the betterment of the community life of Hennepin County."

* * * *

DR. RICHARD SHEPARD, formerly of Red Wing, joined the medical staff of the Albert Lea Medical and Surgical Center.

* * * *

DR. E. V. DAVIS became chief of staff of Bethesda Hospital, St. Paul, succeeding Dr. O. O. Rollie. Dr. Merle C. Bah is chief of staff-elect and 1968 vice-chief, and Dr. James C. Guthrie is secretary-treasurer.

* * * *

DR. JOHN K. MEINERT of the Lakeland Medical Center, Willmar, will serve from April to June aboard the hospital, St. Paul, succeeding Dr. O. O. Rollie. Dr. Merle C. Ceylon.

* * * *

DR. GRANT HARTNAGEL of Red Wing was elected president of the Minnesota Obstetrical and Gynecological Society. Other new officers are Drs. P. T. Watson, St. Paul, vice-president; Reginald Smith, Rochester, secretary-treasurer; and Loren Jacobson, Minneapolis, assistant secretary-treasurer. Dr. Konald Prem of the University of Minnesota was elected to the Board of Governors. Dr. Carl Johnson of Rochester was appointed to fill the unexpired term of Dr. Reginald Smith on the Board of Governors.

* * * *

DR. JOHN T. KELLY was reelected president of the executive board of the medical staff of St. Mary's Hospital, St. Paul. Dr. Berton Mitchell was reelected vice-president and Dr. Milton Seifert, Jr., was elected secretary-treasurer.

* * * *

NEW OFFICERS of the Ramsey County Medical Society are Drs. William H. Hollinshead, president; David M. Craig, president-elect; Edward J. Richardson, vice-president; and Harold G. Ravits, secretary-treasurer.

* * * *

DR. WILLIAM H. ROCK was elected 1968-69 chief of the medical staff of Mercy Hospital, Anoka.

* * * *

DR. OSIAS STUTMAN, medical fellow in the department of laboratory medicine at the University of Minnesota, received the C. J. Watson Award from the Minneapolis Society of Internal Medicine for his research on carcinogen.

* * * *

DR. ARTHUR C. AUFDERHEIDE, pathologist at St. Mary's Hospital, Duluth, will accompany the Plaisted polar expedition in its second attempt to reach the North Pole this month. Dr. Aufderheide, who was second in command and medical officer of the unsuccessful 1967 expedition led by Ralph Plaisted, St. Paul insurance man,

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had indicated earlier that he would not take part in the new venture.

* * * *

DR. HYMAN S. LIPPMAN of St. Paul retired as director of Amherst H. Wilder Foundation's Child Guidance Clinic. Dr. Lippman, who held the post for thirty-six years, was suceeded by Dr. David S. Thorson, a member of the clinic staff since 1953.

* * * *

DR. JOHN H. ROSENOW of Edina was named senior associate editor of *Modern Medicine* magazine, of which he had been an associate editor since 1958.

* * * *

DR. THOMAS E. BROADIE resigned as superintendent of St. Paul–Ramsey Hospital but will remain for nine months as deputy superintendent.

* * * *

DR. DOROTHY WINDHORST, assistant professor of dermatology at the University of Minnesota, was awarded a two-year grant of $32,500 by the American Cancer Society.

* * * *

DR. JOSEPH PRATT of the Mayo Clinic, Rochester, was elected president of the Society of Pelvic Surgeons.

* * * *

DR. ROBERT L. SAUER, formerly of Marengo, Iowa, opened a practice in Preston.

* * * *

DR. CHRIS BARNARD, the Cape Town, South Africa, surgeon who performed the world's first human heart transplant, was a surgical resident at the University of Minnesota in the late 1950s and early 1960s.

* * * *

DR. ROBERT FELDT of the Mayo Clinic, Rochester, was elected to membership in the American Academy of Pediatrics.

* * * *

DR. EDWIN BAYRD, head of a section of internal medicine at the Mayo Clinic, Rochester, was elected president-elect of the clinic staff. Reelection of Dr. L. E. Ward to a second six-year term as a member of the clinic Board of Governors was confirmed. Other staff officers elected were Drs. Dwight McGoon, consultant in surgery, vice-president, and E. Douglas Rooke, consultant in neurology, secretary. Elected as councilors were Drs. Ronald Linscheid, consultant in orthopedic surgery, and Joseph Kiely, consultant in medicine.

* * * *

DR. GEORGE W. CLIFFORD of Alexandria retired from practice Jan. 1. A native of Osakis, Dr. Clifford practiced there from 1933 to 1939 and in Alexandria from 1939 to his retirement.

(Continued on page 20A)

ARTIFICIAL LIMBS
■
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■
TRUSSES
■
SUPPORTERS
■
ELASTIC HOSIERY

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For dysplasia of the hip in the newborn and in early postnatal life (as described by Dr. V. L. Hart, Journal of Bone and Joint Surgery, Vo. 31-A, pp. 357-372, April, 1949).

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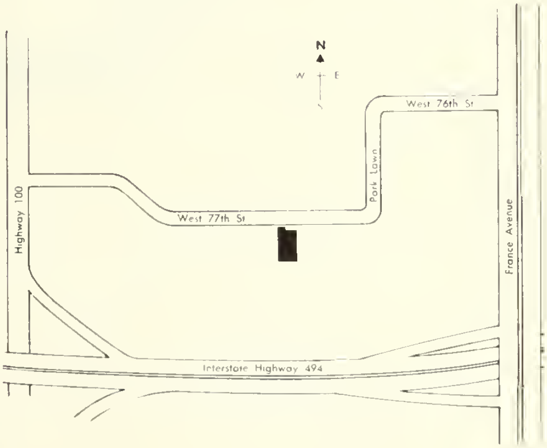

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**DESCRIPTION: Disposable, single-dose plastic unit containing 100 mg. hydrocortisone in aqueous suspension. Suitable for self-administration.**

**INDICATIONS: Nonspecific ulcerative colitis involving left side. Absorption of hydrocortisone may benefit involved tranverse and ascending segments.**

**Contraindications:** Local contraindications include obstruction, abscess, perforation, peritonitis, fresh intestinal anastomoses, extensive fistulas and sinus tracts. Tuberculosis (active, latent or questionably healed), ocular herpes simplex, and acute psychosis are usually considered absolute contraindications. Relative contraindications include active peptic ulcer, acute glomerulonephritis, myasthenia gravis, osteoporosis, diverticulitis, thrombophlebitis, psychic disturbances, pregnancy, diabetes, hyperthyroidism, acute coronary disease, hypertension, limited cardiac reserve, and infections. Weigh expected benefits against such risks. If improvement does not occur within 2 or 3 weeks, discontinue use.

**Precautions:** Administer with caution in severe ulcerative disease because of predisposition to perforation of bowel wall. In advanced chronic disease with loss of mucosa and fibrosis, steroids might hasten deterioration. In severe cases, it is hazardous to delay surgery more than a few days awaiting response to medical treatment. Because of possible adrenal insufficiency, therapy must be withdrawn gradually. If patient is subjected to unusual stress while on steroid therapy or within a year thereafter, adequate supportive measures and increased or reinstated steroids are indicated. For surgery, these measures must be continued throughout pre- and postoperative recovery periods, bearing in mind possible deleterious effect on fresh intestinal anastomoses. Steroids might impair surgical prognosis by increasing hazard of infection. If infection is suspected, administer appropriate antibiotic in large doses. Observe all precautions common to other steroid therapy. Watch for growth suppression in children during long-term use. Keep patients under close observation. Discontinue treatment and institute appropriate measures, if severe reactions occur. If necessary to use Cortenema in pregnancy, examine infants closely for hypoadrenalism; if signs are seen, institute appropriate measures, including steroids.

**Adverse Reactions:** Infrequently, local pain or burning has been reported after use of Cortenema. Exacerbations or apparent sensitivity reactions are relatively rare. It may produce side effects known to occur with other hydrocortisone therapy, such as moon face, buffalo hump, fluid retention, excessive appetite and weight gain, abnormal fat deposits, mental symptoms, hypertrichosis, acne, striae ecchymosis, increased sweating, pigmentation, dry scaly skin, thinning scalp hair, thrombophlebitis, decreased resistance to infection, negative nitrogen balance with delayed bone and wound healing, menstrual disorders, neuropathy, peptic ulcer, decreased glucose tolerance, hypopotassemia, adrenal insufficiency, necrotizing angiitis, hypertension, pancreatitis and increased intraocular pressure.

In children, suppression of growth may occur, increased intracranial pressure may occur and possibly account for headache, insomnia, and fatigue. Subcapsular cataracts may result from prolonged usage. Long-term use may result in catabolic effects characterized by negative protein and calcium balance. Osteoporosis, spontaneous fractures and aseptic necrosis of hip and humerus may occur as part of catabolic phenomenon.

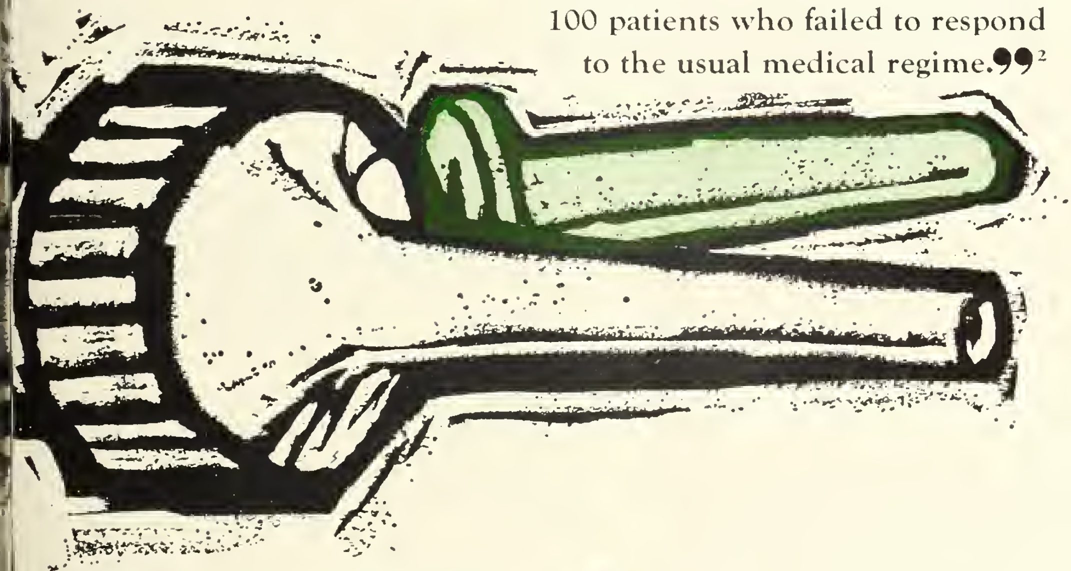
# lcerative colitis

**Cortenema**

hydrocortisone retention enema

❝safe, efficacious and worthy of trial in most cases of ulcerative colitis❞[1]

❝. . . continued good results in more than 100 patients who failed to respond to the usual medical regime.❞[2]



**osage and Administration:** Use of Cortenema is predicated ipon concomitant use of modern supportive measures, such is blood replacement, rational dietary control, antispasnodics and sedatives, antibacterial therapy, and systemic teroids.

Usual dose is one Cortenema daily for 2 or 3 weeks and very second day thereafter, administered intrarectally in evening before retiring. Every effort should be made to reain medication for at least one hour, preferably all night. This may be facilitated by prior sedation and/or antidiarrheal medication. If improvement does not occur within wo or three weeks, discontinue use.

Instruct patient to lie on left side during instillation. Shake bottle vigorously to resuspend hydrocortisone. Expose lubricated tip by removal of sheath. *Carefully* insert ip into rectum in direction of sacrum. Slowly express contents by compressing container. After instillation, patient should remain on left side at least 30 minutes.

Duration of treatment depends on degree of response. Symptomatic response usually occurs within 5 to 7 days. mprovement in mucosa, gauged by barium enemas and sigmoidoscopic examinations, may lag somewhat behind clinical improvement. Usual duration is two weeks, although some cases require up to 2 or 3 months. Minimal control of symptoms is insufficient basis for prolonged use. If no clinical or proctologic response occurs within 2 or 3 weeks, or if patient's condition worsens, discontinue use.

Symptomatic improvement should not be sole criterion n judging efficacy. Actual sigmoidoscopic examination and X-ray visualization are most reliable. Since steroids can nhibit wound healing, Cortenema should not be used in mmediate or early postoperative period following ileorectostomy.

**How Supplied:** In boxes of 7 single-dose units.

**Caution:** Federal law prohibits dispensing without a prescription.

**For additional information, reprints or sample, write**

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---

1. Sherman, L. F.: The treatment of ulcerative colitis with hydrocortisone alcohol retention enemas. A topical and systemic anti-inflammatory agent, *Minn. Med.* 48:605, May 1965.

2. Sherman, L. F., Tenner, R. J. and Schottler, J. L.: Treatment of ulcerative colitis with hydrocortisone alcohol retention enemas: A topical and systemic anti-inflammatory agent. Part II, *Dis. Colon & Rectum* 10:43, January-February 1967.

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Relief of neuritic pain from *herpes zoster* (shingles) is prompt[1-3]—usually after the first few intramuscular[2] injections—particularly when therapy is administered early.[3,4] The duration of disability in many patients is often significantly shortened.[2] Postherpetic neuralgias—even in the elderly—rarely develop.[1-4] Complete pain relief is observed in most patients within 5 days.[2]

Administration in *herpes zoster:* one ampul (1.3 cc.) I.M. daily for 2 to 5 days. Caution: For intramuscular use only. Inadvertent I.V. administration may cause anaphylactoid reaction. Supplied: Boxes of 10 ampuls, 1.3 cc. each.

References:

1. Combes, F. C. and Canizares, O.: *New York State J Med.* 52:706-708 (Mar. 15) 1952.
2. Xander, G. W.: *Western Med* 1.14 (Sept.) 1960.
3. Baker, A. G. *Penna Med. J* 63:697-698 (May) 1960.
4. Lehrer, H. W., Lehrer, H. G., and Lehrer, D. R., *Northwest Med.* 75:1249-1252 (Nov.) 1955

Sherman Laboratories

Detroit, Michigan 48211

NEWS BRIEFS

(Continued from page 17A)

**DR. C. A. TIETZ** of Virginia was certified as a diplomate of the American Board of Obstetrics and Gynecology.

## North Dakota

**DR. PETER V. MORRISON**, formerly of Bismarck, became the first doctor-in-residence the town of Jackman, Maine, has had in eighteen months.

* * * *

**DR. G. H. HEIDORN** of Minot was elected president of the Northwest District Medical Society, succeeding Dr. Lloyd A. Giltner. Other new officers are Drs. B. Jayapathy, Minot, vice-president, and Bernard B. Huss, Jr., Minot, secretary-treasurer.

* * * *

**DR. GEORGE M. JOHNSON** of Bismarck was elected to fellowship in the American Academy of Pediatrics.

* * * *

**DR. WILLARD A. WRIGHT** of Williston was appointed director of the North Dakota Regional Medical Program.

* * * *

**DR. NEIL S. WILLIAMS** of Fargo was elected chief of staff of the Dakota Hospital active medical staff, succeeding Dr. R. J. Ulmer. Other officers elected were Drs. E. P. Wenz, vice-chief of staff; R. D. Weible, secretary-treasurer; and J. J. Spier, member of the executive committee.

## South Dakota

**DR. N. B. SAOI** of Yankton was elected president of the Sacred Heart Hospital medical staff for 1968, succeeding Dr. C. B. McVay. Other new officers are Drs. James K. Jackson, vice-president; John T. Tidd, secretary-treasurer; and C. B. McVay, M. B. Lyso, Morris Radack, and C. J. Vlach, members of the executive committee.

* * * *

**DR. WILLIAM RENFORTH**, formerly of Michigan, opened an office in Edgemont.

## *Deaths . . .*

**DR. ALFRED L. VADHEIM**, 83, formerly of Tyler, Minn., died in Brookings, S.D., Nov. 26. Dr. Vadheim served Tyler and the surrounding area as physician and surgeon for fifty years, until his retirement in 1961.

* * * *

**DR. DONALD CHURCH BALFOUR, JR.**, 51, a native of Rochester, Minn., died in San Marino, Calif., Nov. 26. Dr. Balfour's mother was the former Carrie Mayo, daughter of Dr. and Mrs. W. J. Mayo. He was a fellow at the Mayo Foundation, of which his father was the director.

* * * *

**DR. JOHN L. SHELLMAN**, 91, formerly of St. Paul, Minn., died in Pacific Palisades, Calif., Nov. 23. A 1903 graduate of the University of Minnesota School of Medicine, Dr. Shellman practiced in Nashwauk, Minn., and for twenty-five years in St. Paul.

* * * *

**DR. CARL O. KOHLBRY**, 70, Duluth, Minn., died Nov. 29. Born in St. Louis, Mo., Dr. Kohlbry was engaged in private practice in Duluth from 1921 to 1954, when he became health director of the Board of Education.

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RATES: 70 words or less, one time, $3. two consecutive times, $5. Copy must reach us by the 10th of the month preceding publication. REPLIES to advertisements with key numbers should be addressed in care of THE JOURNAL-LANCET, 65th at Valley View Road, Southdale Park, Minneapolis, Minnesota 55424.

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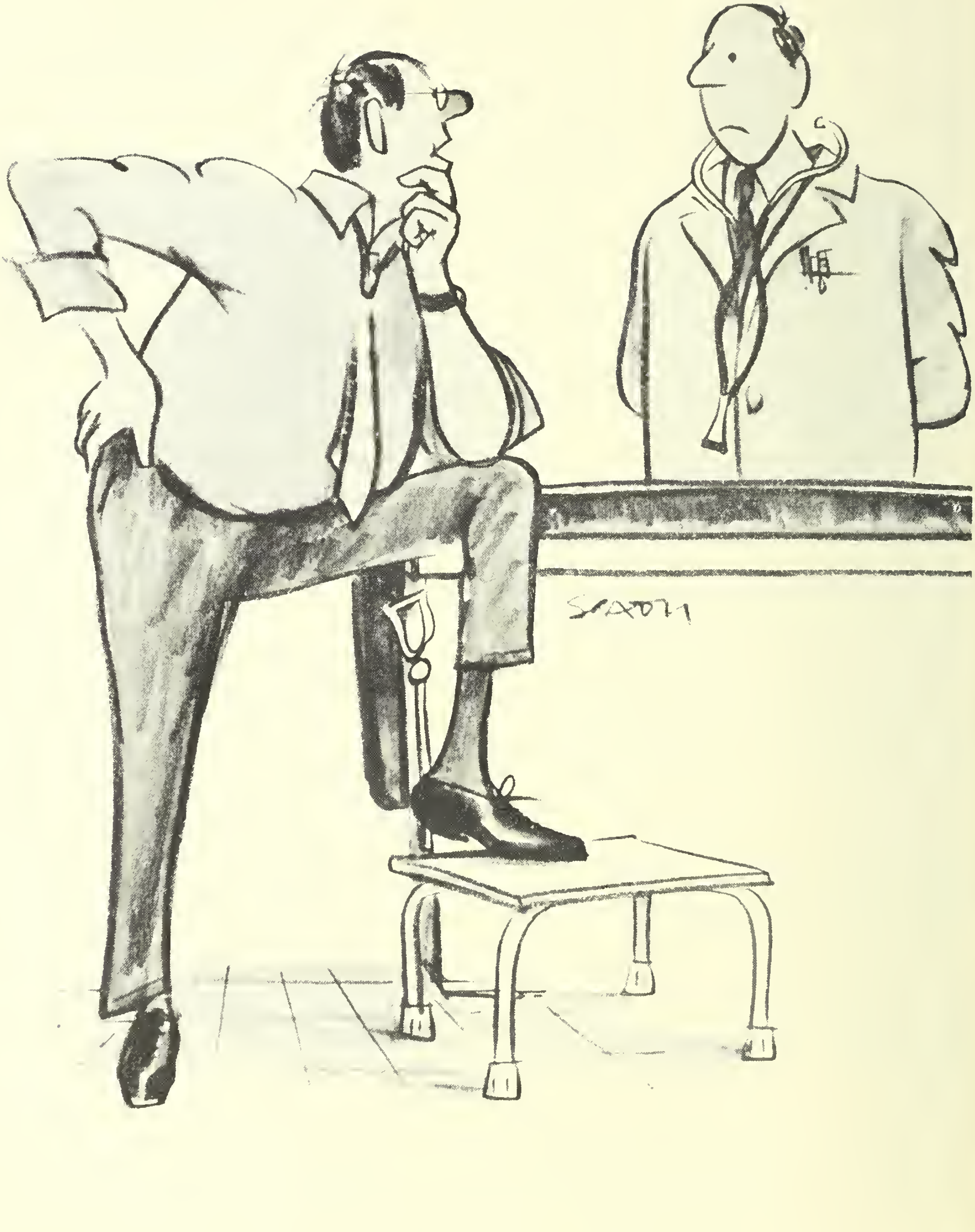

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Each Novahistine LP tablet contains phenylephrine hydrochloride, 25 mg., and chlorpheniramine maleate, 4 mg.

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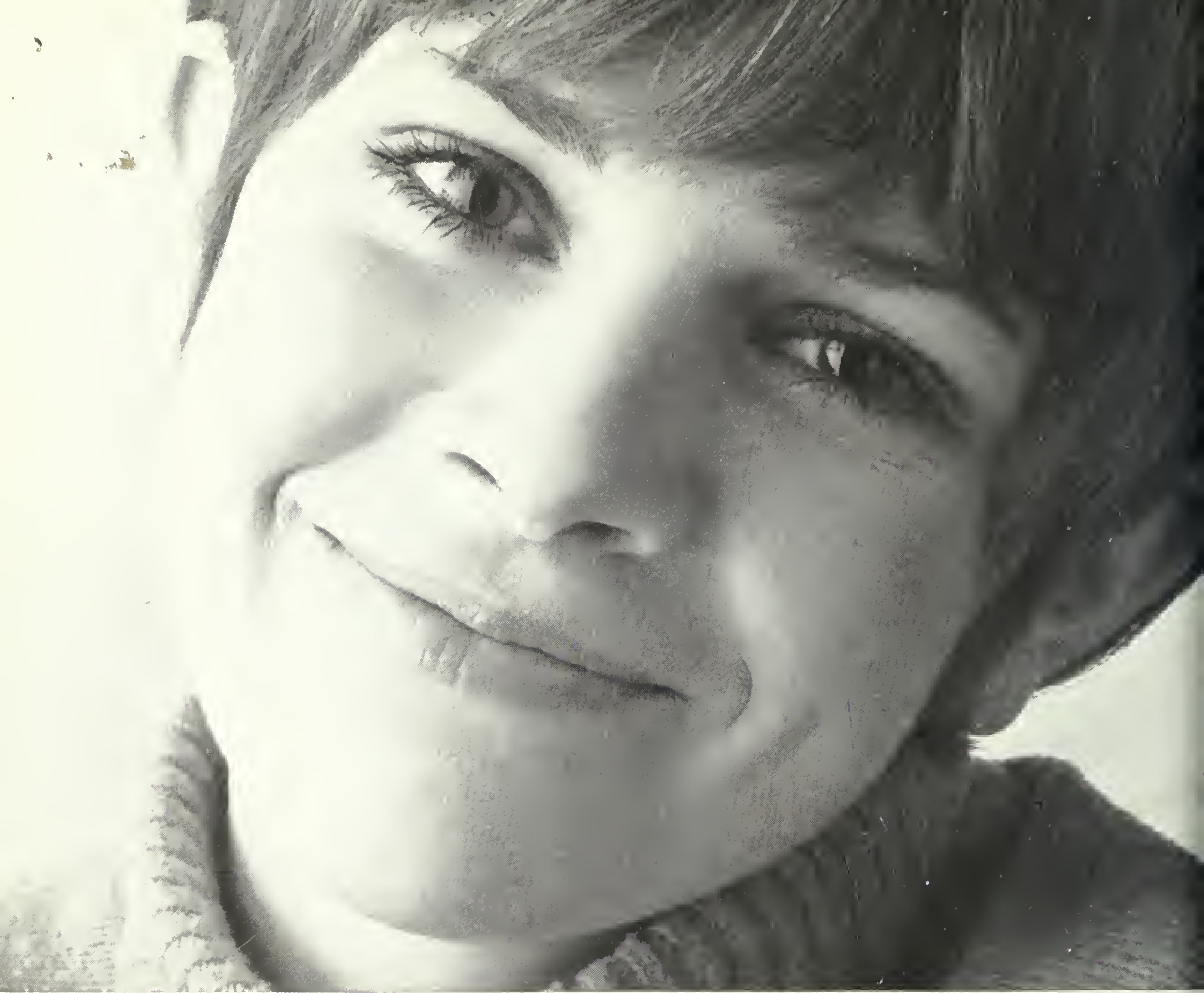

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**Warnings**: Acute anaphylaxis (may prove fatal unless promptly controlled) is rare but more frequent in patients with previous penicillin sensitivity, bronchial asthma or other allergies. Resuscitative (epinephrine, aminophylline, pressor amines) and supportive (antihistamines, methylprednisolone sodium succinate) drugs should be readily available. Other rare hypersensitivity reactions include nephropathy, hemolytic anemia, leucopenia and thrombocytopenia. In suspected hypersensitivity, evaluation of renal and hematopoietic systems is recommended.
**Precautions**: In suspected staphylococcal infections, perform proper laboratory studies including sensitivity tests. If overgrowth of nonsusceptible organisms occurs (constant observation is essential), discontinue penicillin and take appropriate measures. Whenever allergic reactions occur, withdraw penicillin unless condition being treated is considered life threatening and amenable only to penicillin. Penicillin may delay or prevent appearance of primary syphilitic lesions. Gonorrhea patients suspected of concurrent syphilis should be tested serologically for at least 3 months. When lesions of primary syphilis are suspected, dark-field examination should precede use of penicillin. Treat beta-hemolytic streptococcal infections with full therapeutic dosage for at least 10 days to prevent rheumatic fever or glomerulonephritis. In staphylococcal infections, perform surgery as indicated.
**Adverse Reactions**: (Penicillin has significant index of sensitization): Skin rashes, ranging from maculopapular eruptions to exfoliative dermatitis; urticaria, serum sickness-like reactions, including chills, fever, edema, arthralgia and prostration. Severe and often fatal anaphylaxis has been reported (see "Warnings").
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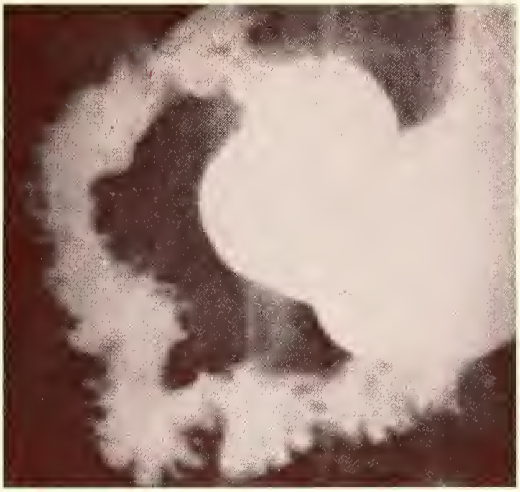

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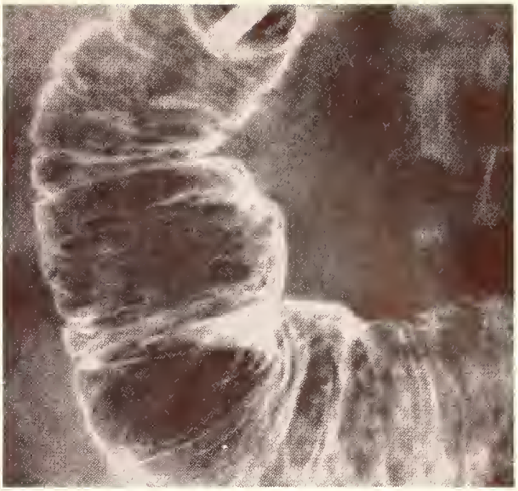

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The same pharmacologic efficiency has proved of pronounced value in such conditions as: *peptic ulcer, pylorospasm, biliary dyskinesia, functional hypermotility and irritable colon.*

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*Precautions:* Since varying degrees of urinary hesitancy may occur in elderly males with prostatic hypertrophy, this should be watched for in such patients until they have gained some experience with the drug. Although never reported, theoretically a curare-like action may occur with possible loss of voluntary muscle control. Such patients should receive prompt and continuing artificial respiration until the drug effect has been exhausted.

*Side Effects:* The more common side effects, in order of incidence, are xerostomia, mydriasis, hesitancy of urination and gastric fullness.

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(1) Bilbao, M. K.; Frische, L. H.; Rösch, J., and Dotter, C. T.: Hypotonic Duodenography, Scientific Exhibit, Radiological Society of North America, Chicago, Nov. 27—Dec. 2, 1966.

(2) Bilbao, M. K.; Frische, L. H.; Dotter, C. T., and Rösch, J.: Hypotonic Duodenography, Radiology 89:438-443 (Sept.) 1967.

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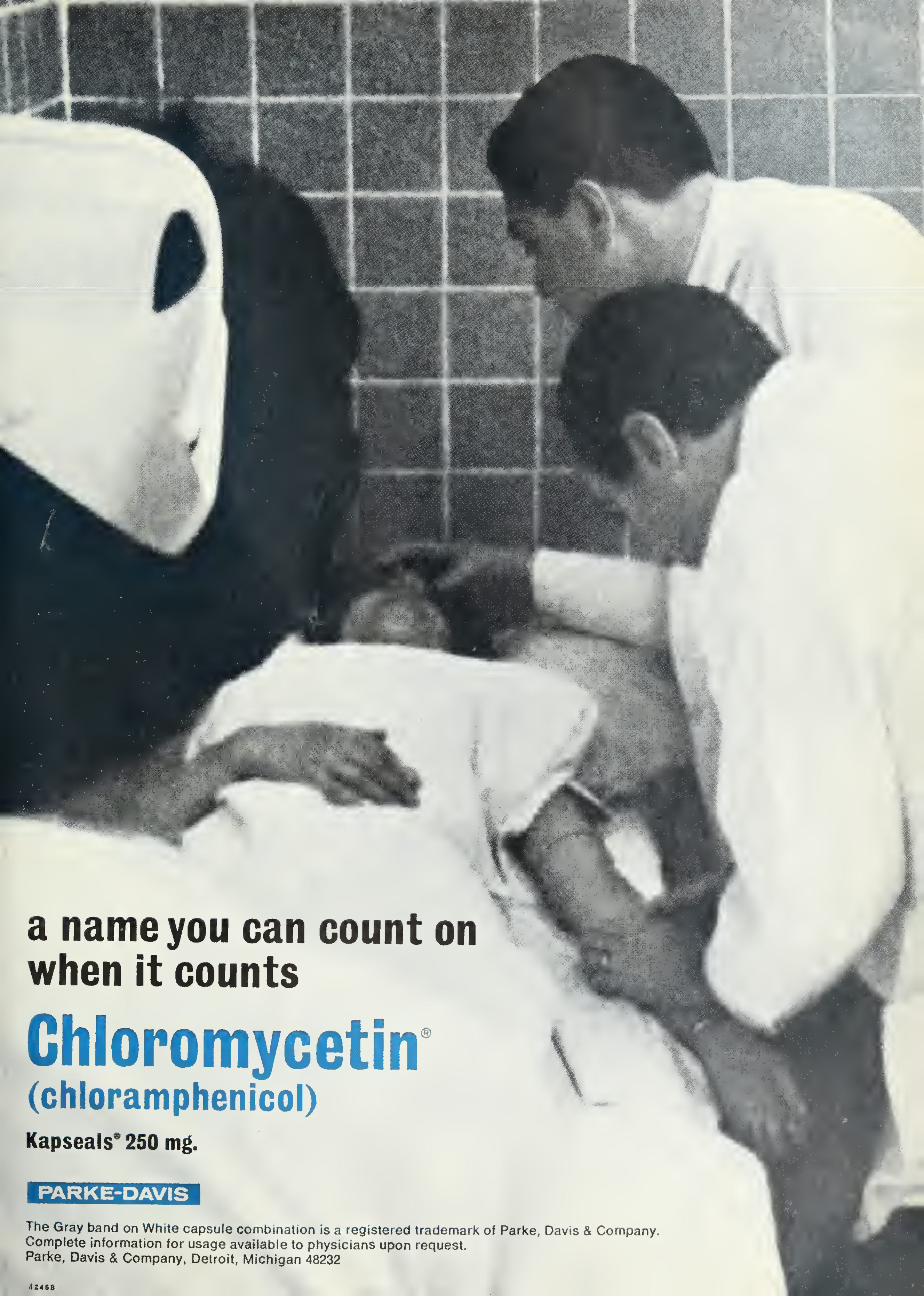

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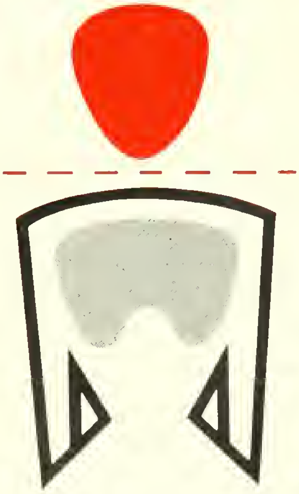

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Precautions. Antihistamines may produce drowsiness. Patients should be cautioned about performing tasks which require alertness, such as driving, operating dangerous machinery. Give tripelennamine with caution to patients with known history of petit mal seizures. Give hypnotics and sedatives with caution to patients receiving tripelennamine. *Use caution in hypertension, hyperthyroidism, diabetes mellitus, or heart disease.*

Adverse Reactions. Antihistamines frequently produce some form of adverse response, few of which are serious. Most common are drowsiness, dryness of mouth, dizziness, headache, excitation, gastric discomfort. Latter can be alleviated by taking tablets with food. If symptoms persist, adjust dosage or discontinue medication.

Warning. On rare occasions, severe acute hypersensitivity, leukopenia and agranulocytosis have been reported in conjunction with antihistamine therapy. Repeated blood counts are recommended for patients on long term therapy.

Caution: Federal law prohibits dispensing without a prescription.

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[1] Stoesser, A., and Nelson, L.: Clinical evaluation report, July, 1967

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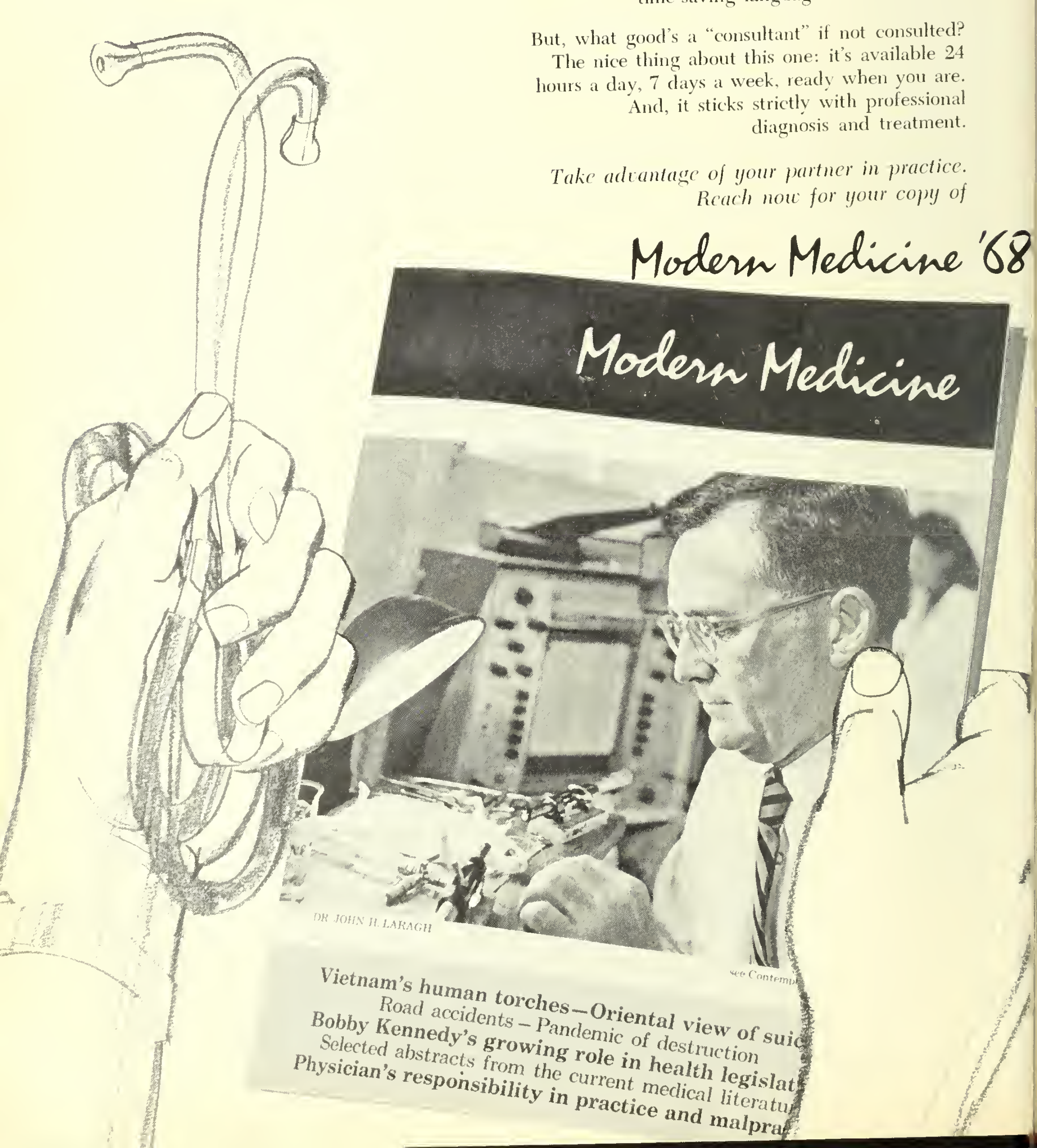

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# Intubation Decompressive Therapy in Intestinal Obstruction

LOUIS SPERLING, M.D., Ph.D.
Los Angeles

GASTROINTESTINAL SUCTION has played an important role in reducing the mortality of intestinal obstruction since Wangensteen introduced nasogastric intubation in the early 1930s.[1–7] Over the years, the indications for decompression therapy have been clarified and its limitations and dangers are better understood. If used properly, intubation can be of great benefit.

Treatment of intestinal obstruction should include [1] correction of general bodily disturbances secondary to the obstruction such as dehydration and electrolyte imbalance, [2] reduction of increased intraluminal pressure, that is, decompression of the bowel, and [3] removal of the cause of obstruction and restoration of normal bowel function.

## SELECTION OF TREATMENT

*Nonoperative treatment by intestinal intubation* may be employed [1] in patients with early, simple postoperative intestinal obstruction due to fibrinous adhesions, [2] in patients with adynamic ileus due to peritonitis, gallbladder or renal calculus, pancreatitis, or retroperitoneal hemorrhage, or [3] in patients with repeated episodes of obstruction due to adhesions or carcinoma who have had multiple operations in the past. Intestinal intubation should also be employed in preparing for operation.

Conservative management imposes a great responsibility upon the attending physician. Observations at frequent intervals are essential. The surgeon must be sure that he is not dealing with a "closed-loop" obstruction and that strangulation is not developing due to increasing intraenteric pressure. The necessity for surgical intervention in the presence of strangulation is obvious, but the point at which failure of decompression should be admitted may not be clear. There should be unmistakable evidence of improvement within twenty-four hours after beginning decompression. Further delay is associated with increased mortality. Unnecessary operation is less hazardous than failure to relieve obstruction or to recognize the signs and symptoms of a strangulating process. In Silen's consecutive series of 164 patients treated by intubation, only two deaths occurred, both revealed at autopsy to have been caused by strangulation.[8]

When decompression is successful, the following events occur, usually within six to twenty-four hours:[9] [1] gas pains abate, [2] distention decreases, [3] gas is visualized in the colon by roentgenogram, [4] the amount of fluid aspirated is decreased, [5] the patient can tolerate discontinuance of suction.

*Operative treatment* to relieve intestinal obstruction is almost always the wisest course, pro-

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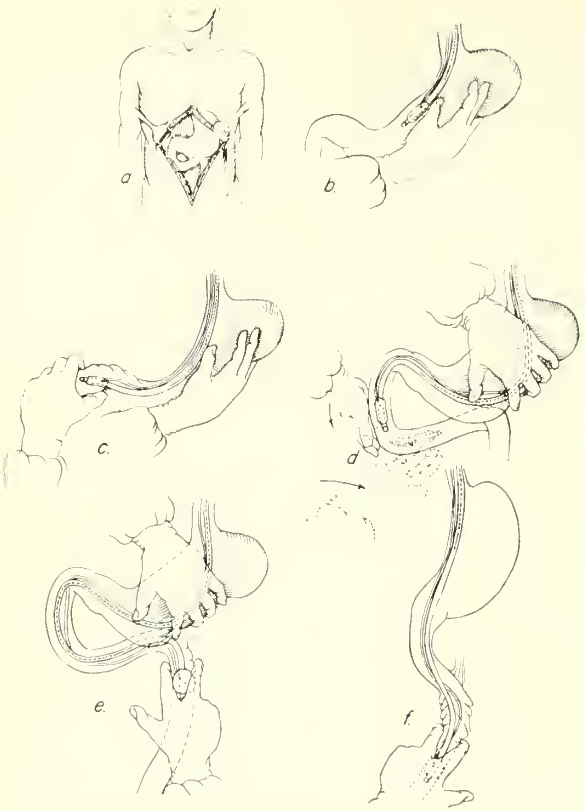

Fig. 1. Technique of intubation at operation: (a) following incision in the abdomen, tube is introduced through the mouth into the esophagus, (b) surgeon's right hand, placed along the greater curvature of the stomach, tilts the tip of the tube toward the pylorus, (c) left hand directs the tube through the pylorus, (d) left hand supports the stomach while the right hand moves along the ligament of Treitz and then along the transverse mesocolon, preventing the tube from coiling within the stomach, (e) and (f) tube must have either a balloon or large cut-out openings in the end so that it can be grasped. (From G. A. Smith, Bull. N.Y. Acad. Med. 40:878, 1964, with permission of author and publisher)

vided the patient enters the hospital in good physiologic condition. With more than moderate distention of the bowel, the procedure should include aseptic peroral decompression through a long, large-bore plastic tube after the abdomen has been opened (Fig. 1). A short tube, inserted preoperatively, prevents vomiting and aspiration. A long tube may be maneuvered into the small bowel before operation, although this demands patience and perserverance.

The long intestinal tubes used most frequently are the Miller-Abbott tube with a double lumen;[10–12] the Harris tube, with a large single lumen having a rubber balloon filled with mercury at the end;[13] and the Cantor tube, having a large single lumen with a neoprene balloon into which mercury is injected[14] (Fig. 2). The long tubes are most successfully used in the immediate postoperative period to relieve paralytic ileus or intestinal obstruction due to fibrinous adhesions. When long tubes are passed under radiographic guidance, the chance of success is increased. Correct placing of these tubes and faithful attention to their performance may prevent laparotomy. In any case, they permit time for correction of fluid and electrolyte problems, and sometimes by their use emergencies can be converted to elective procedures. Nevertheless, there has been some reluctance to accept long tubes because of trauma during intubation, the difficulty in passing them through the pylorus in distended patients, the need for greater care and effort, and the higher incidence of complications. Occasionally, difficulty in passing the tube forces the decision to operate—perhaps fortuitously.

For peroral intubation, we have been using a large plastic tube with large holes in the distal end. At time of operation, the tube is passed through the mouth by the anesthetist and manipulated by the surgeon to achieve complete decompression of the bowel without spillage (Fig. 1). The Leonard tube,[15–17] used at the University of Minnesota, is semirigid and contains a wire stylet (Fig. 3). Earlier, Smith[18] developed a tube with a flexible stylet and a controllable tip. He has since used this technique

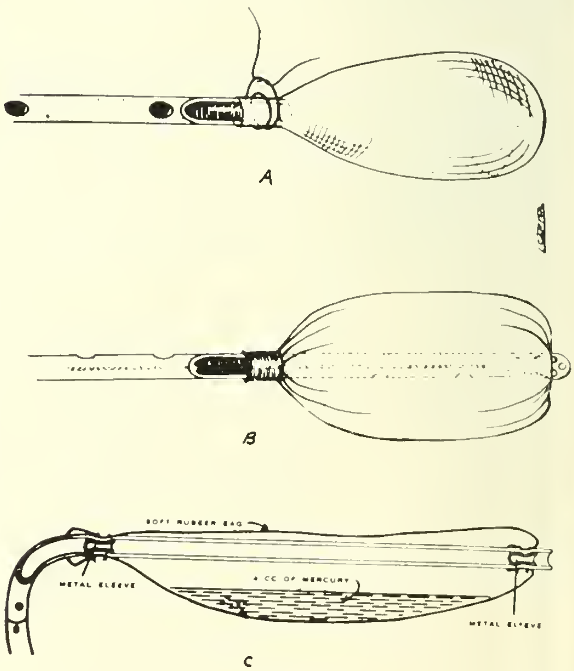

Fig. 2. Long tubes in current use: [A] Cantor tube, [B] Miller-Abbott tube, [C] Harris tube

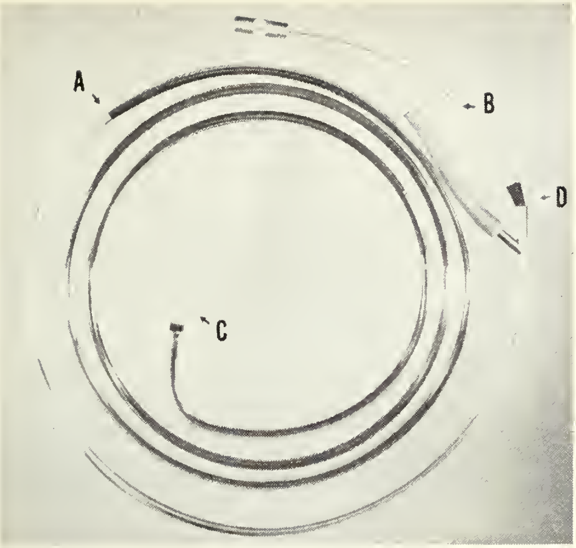

Fig. 3. Leonard's long coiled-spring tube, demonstrating component parts: (A) coiled spring, (B) music-wire stylet, (C) bulbous tip, (D) "Y" connector with stopper to break suction. (From A. S. Leonard, Surgery 57:492, 1965, with permission of author and publisher)

successfully in over 1,000 patients.[19] The recent introduction of sump-type double-lumen plastic tubes assures a better mechanical performance than the single-lumen tubes.

### PRECAUTIONARY MEASURES

It is worthwhile to discuss with the patient in advance the importance of intubation therapy. By gaining the patient's confidence and cooperation, the surgeon can make his task easier. A frightened and uninformed patient cannot cooperate, and the forceful and sometimes brutal passage of a tube may lead to aspiration of gastric contents and even wound disruption.

Topical anesthesia and lubrication should be used to minimize trauma. For nasogastric intubation, it is helpful to shrink the nasal membrane before passing the tube. Tubes should be avoided in patients who are heavy smokers and those with head colds or sinusitis as well as in the presence of esophageal varices.

Unless gastric contents are aspirated, the position of the tube should be confirmed by roentgenogram or fluoroscopy. Auscultation of the epigastrium while air is injected into the tube is useful.

Tubes with a mercury bag or balloon should be taped in place after reaching the 3-ft. mark to prevent them from passing through the ileocecal valve or the site of anastomosis. If this should occur, it is better not to withdraw the tube but rather to cut it off and allow it to pass spontaneously by rectum.

The suction apparatus must be maintained at a negative pressure of less than 10 mm. Hg. A schedule of regular inspection must be enforced. Frequent irrigations with dilute soda solution or saline are necessary to keep the tube open. The position of the tip of the tube should be changed daily.

The tube should be removed as soon as decompression has been accomplished. It must be removed at once if the patient develops dyspnea, dysphagia, hoarseness, blood-streaked sputum, or cough.

Narcotics should not be given to patients undergoing decompression treatment. If pain becomes intractable, a strangulating process should be suspected and surgical exploration performed.

### COMPLICATIONS OF INTUBATION

In spite of mounting experience and precautionary measures, complications do occur,[9,20,21] and some may assume serious proportions. *Otitis media,* due to irritation of the ostia of the eustachian tubes, is considered a hazard in infants. Kaufman's recent study, however, failed to bear

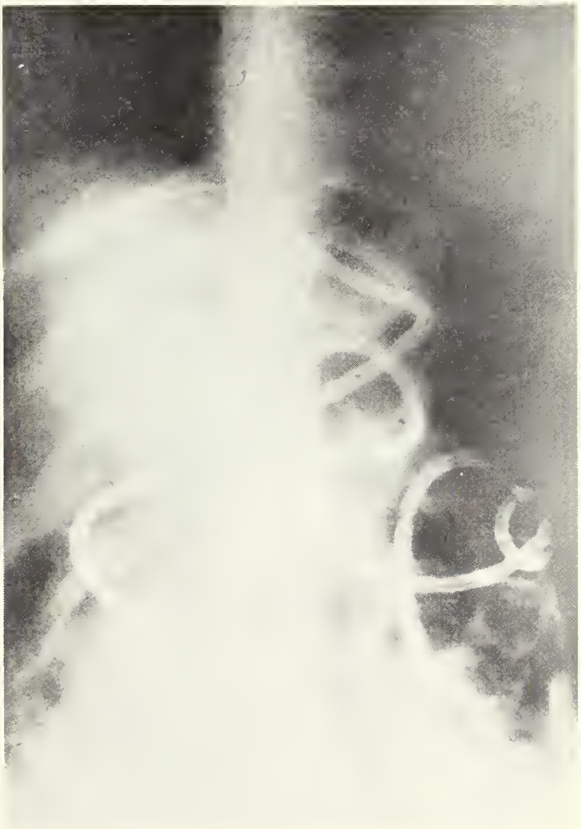

Fig. 4. Knotting of the tube which occurred in the stomach and passed on into the small bowel, causing interference with suction

this out.[22] *Parotitis* may be brought on by the dryness caused by mouth breathing. *Sinusitis* and excessive mucus formation may occur, especially in heavy smokers. Patients who have difficulty in coughing up secretions may develop *atelectasis* or *pneumonitis*. Pneumonitis may also result from tracheal aspiration if the tube is accidentally introduced into the trachea.

*Pressure necrosis* of the alae of the nose has been known to occur because of improper fixation of the tube. Care must be taken to fasten the tubes properly, without pressure on the side of the nose. Pressure necrosis of the esophagus and epiglottis, combined with perichondritis, may cause *laryngeal obstruction*. Tracheotomy has sometimes been necessary. *Esophageal stricture* may follow esophagitis due to reflux of gastric juice around the tube. Dilatation may be required. Rupture of esophageal varices is a rare hazard.

*Perforation* of the stomach or small bowel may follow pressure necrosis caused by the impact of the tip of the tube or mercury balloon upon a tumor or the bowel wall. Previous gastroenterostomy presents the possibility of the tube passing through the pylorus and the afferent loop and returning to the stomach by way of the stoma. In this manner, it may make one or more circles. Fortunately, this seldom happens.

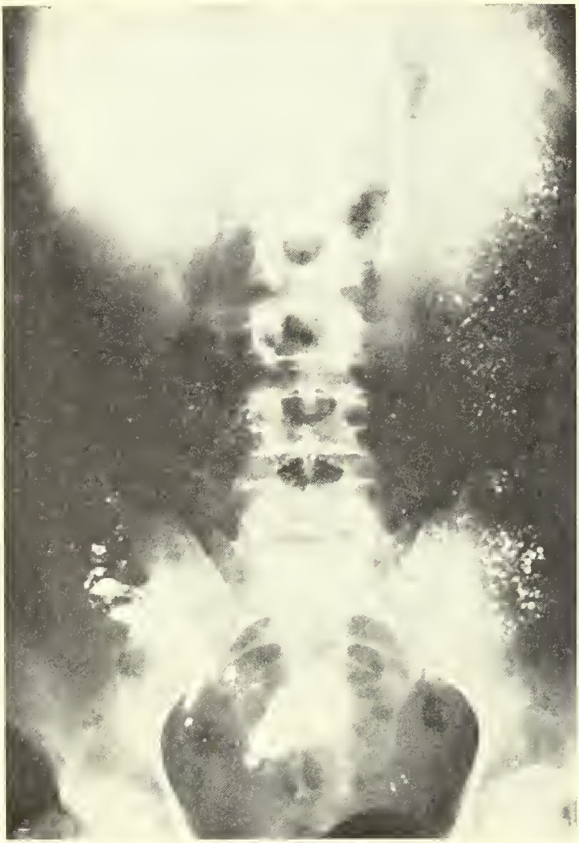

Fig. 5. Spillage of mercury following detachment of the balloon. Note scattering of mercury in appendix and throughout the colon. Both bag and remainder of mercury passed by rectum within thirty-six hours.

*Knotting of the tube* in the stomach or small bowel may occur when the tube is introduced too rapidly (Fig. 4). *Overinflation of the balloon* can result if too much air is introduced into the Miller-Abbott tube. Distention of a balloon containing only mercury has been attributed to permeation of intestinal gases through the wall of the balloon. Latex balloons are considered more permeable than those made of neoprene rubber, such as that used with the Cantor tube. Flushing the bag with carbon dioxide has been recommended to remove all air from the tube. Cantor prefers to introduce mercury into the bag with a 21-gauge needle to allow for the escape of air and gas. Overinflation of the tube may cause spillage of mercury (Fig. 5). Occasionally, mercury may enter the wrong channel of the Miller-Abbott tube. Free mercury in the intestinal tract apparently will not cause systemic mercury poisoning except when stasis and obstruction are present. Mercury caught in fistulous tracts in the appendix or intestine may interfere with local tissue healing and result in a persistent fistula.

*Removal of the tube* may be difficult or even impossible when long tubes with balloons containing air or mercury are used. In this case, roentgenograms should be made immediately. The Miller-Abbott tube can be easily decompressed, but those without a lumen opening to the outside can become distended, since the membrane may be permeable to gases. When tubes cannot be withdrawn readily, intussusception of the small bowel can occur.[23] Vigorous traction should be avoided. If removal is difficult, it is safer to clamp the tube and wait awhile before making another attempt. It may be necessary to sever the tube and allow the lower portion to pass through the colon and rectum. Operative removal of the tube may be necessary when all other procedures have failed and intestinal obstruction persists.

*Disturbance of fluid and electrolyte balance*, with loss of sodium, potassium, chloride, and proteins, is an ever-present hazard. Replacement of fluid and electrolyte losses is of prime importance. Accurate records must be kept of total fluid intake and output as well as the nature and volume of the fluid lost. A frequent check of the serum electrolytes is required. It may sometimes be necessary to examine an aliquot sample of aspirated fluid to evaluate the total electrolyte loss. Shields[24] has recently confirmed our original findings[25] that absorption of water from the lumen of the bowel is impaired in simple intestinal obstruction and that there is increased secretion into the lumen of the obstructed bowel with loss of serum electrolytes.

Fluid losses may be considerable and the deficit greater than previously calculated, due to loss of secretions from liver, pancreas, stomach, and bowel. The extracellular compartment becomes depleted and, with reduction of plasma volume, shock ensues. For fluid replacement a solution of half-strength physiological saline is recommended, with sufficient potassium chloride added to compensate for any loss of serum potassium. Extreme potassium losses from vomiting or through nasogastric suction may cause hypotension and may produce cardiac irregularities severe enough to be evident on the electrocardiogram. Low serum potassium levels seem to perpetuate ileus and prevent return of adequate bowel tone. When large amounts of dextrose and water are given alone, without electrolytes, there is the danger of water intoxication with severe neurological sequelae. Ringer's lactate solution should be used to correct metabolic acidosis.

### SPECIAL PROBLEMS

If peroral or nasogastric intubation proves difficult or impractical at time of operation, *decompression by trocar and catheter*[26] can still be accomplished with minimal spillage or contamination. Baker[27,28] has designed a long jejunostomy tube which is introduced into the upper jejunum and secured by a purse-string suture. The tube is equipped with an inflatable balloon which is easily grasped and drawn down to decompress the distended gut. Removal of the cause of the obstruction, that is, lysis of adhesions or correction of volvulus, is thus simplified. Strangulation will, of course, necessitate primary resection and anastomosis. A strangulating process should be suspected at the onset of continuous rather than intermittent pain, upon signs of peritoneal irritation such as spasm and rebound tenderness, by the appearance of a palpable mass, or by a rise in pulse, temperature, or leukocyte count.

For prophylaxis against adhesions reforming, a *Noble plication* can be effectively performed with the long tube, which may be brought out through a gastrostomy. Leonard's coiled-spring tube is simple to use and has met with considerable success.[15–17]

Many supportive measures have been advocated in the past for the *management of adynamic ileus,* but most of them are not effective and have been abandoned. The primary therapeutic maneuver remains tube decompression and treatment of the cause. Usually, this type of ileus can be prevented by limiting the patient to nothing by mouth in the immediate postoperative period and maintaining this restriction until the patient has passed flatus. Gerber insists that such management makes intubation entirely unnecessary.[29,30]

During the past few years, there has been a revival of temporary *gastrostomy* for decompression of the stomach and small intestine in the postoperative period.[31–33] In 1937, I watched George Gray Turner demonstrate gastrostomy and learned that he had been using it for many years. This simple and effective procedure eliminates the complications and annoyances of nasogastric tubes. Gastrostomy is especially valuable in patients who require suction for a long period of time, in the very aged and the very young, and in patients with extensive pulmonary disease, such as emphysema. However, complications may occur with gastrostomy, too, and deaths have resulted from peritonitis due to leakage at the site of fixation of the stomach to the abdominal wall.

Simple, mechanical *obstruction of the colon* with marked distention should be regarded as a surgical emergency. Relief is usually accomplished by either transverse colostomy or cecostomy. Transverse colostomy is preferred for decompression when distention of the colon is due to obstruction of the sigmoid. Cecostomy may occasionally be recommended for obstructions involving the right and transverse colon up to the splenic flexure, although primary resection of the right colon is usually preferred. Intubation should never be relied upon to decompress the distended colon. However, in about 40% of cases the small bowel is also distended due to incompetence of the ileocecal valve,[34] and, in this event, nasogastric intubation may be utilized.

### SUMMARY

Conservative management of intestinal obstruction by gastrointestinal intubation should be considered in patients with early postoperative ileus or when repeated operations or episodes of obstruction make another surgical intervention inadvisable. As a rule, however, operative treatment is preferable. A variety of long intestinal tubes is available to meet different requirements. Precautionary measures should be observed throughout the process of intubation. This procedure can lead to a number of complications and prominent among these is distur-

bance of the fluid and electrolyte balance. While decompression of the stomach by gastrostomy avoids some of the disadvantages of gastrointestinal intubation, it is in turn not without hazards. Nasogastric and operative peroral intubation are valuable when properly used and have considerably reduced mortality due to intestinal obstruction.

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# Clinical Application of the Single-Breath Diffusion Test as an Independent Variable in the Prediction of Degree of Pulmonary Disability

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Grand Forks

THE PURPOSE OF THIS PAPER is to present a clinical and physiologic classification of the degree of pulmonary disability in primary pulmonary disease, which includes pulmonary diffusion as one of the physiologic parameters. A classification of this type would be useful if it aided evaluation of the pulmonary disability caused by a partial alveolar-capillary block in patients being considered for pensions, industrial disability compensation, insurance, diagnosis, therapy, and prognosis. At the present time, there is no universally accepted method for categorizing pulmonary disability, as is done with the American Heart Association's classification of cardiac disability in disease.

Evaluation of subjective symptoms related to the physician in a clinical history is an unreliable means of assessing the degree of pulmonary disability because patients often exaggerate their respiratory symptoms. On the other hand, a strong-willed patient with severe pulmonary disease, even though dyspneic and suffering from associated early fatigue causing severe discomfort, will continue working at his occupation for weeks and months, especially when he has a young family depending upon him for their livelihood.

In this study, pulmonary disability was considered to exist when the patient was unable to perform his established occupational work requirements because of pulmonary disease. This definition leads to variation in the estimate of the degree of functional impairment of the lungs because of the different work energy requirements in different occupations, that is, heavy laborers contrasted to accountants.

Although this paper was restricted to the clinical and laboratory data concerning the classification of degree of pulmonary disability, it was realized that such a classification would serve only as a basis for the partial evaluation of the whole man. For example, a laborer would be considered disabled because of pulmonary disability if he did not have the training to do a desk job even though physically able to do so, and an individual with functional impairment and dyspnea equal to that of the laborer would not be occupationally disabled if his job involved only mental work and minimal physical work. Therefore, a distinction is made between pulmonary insufficiency and disability.

Pulmonary insufficiency and pulmonary disability are sometimes used interchangeably although they are not synonymous. Some patients are severely disabled without pulmonary insufficiency for the exchange of oxygen and carbon dioxide; others with moderate or severe anoxia do not complain of disability.

## METHODS AND MATERIALS

The first step in the establishment of the clinical classification of pulmonary disability was to obtain a complete medical history, X-rays of the chest, and routine clinical laboratory data.

Then, on the basis of the clinical data, the patient was placed in one of six categories of pulmonary disability, as previously published by Wilson.[1,2] Each class was weighed with an arbitrary value from 600 to 100 for computer analysis. The third step was to do the pulmonary function tests. The system of nomenclature used was that proposed by the section on pulmonary

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TABLE 1

NOMENCLATURE AND SYMBOLS USED IN TESTING

| *Variable No.* | *Symbol* | *Meaning* |
|---|---|---|
| I | DPD | Degree of pulmonary disability |
| II | $MVV_f$ | Maximal voluntary ventilation at free respiratory rate |
| III | $FEV_1$ | One-second forced expiratory volume |
| IV | Age | Age in years |
| V | $D_L$ | Pulmonary diffusion from the alveolar space per minute per mm. Hg |

function testing committee of the American College of Chest Physicians.[3] These terms and their symbols are outlined in Table 1. The fourth step was to analyze the data with the computer and derive the desired equation to give the degree of pulmonary disability (DPD) a numerical value. Finally, the fifth step was to construct the nomogram to simplify the solution of the equation.

Without knowledge of the pulmonary function test, the degree of pulmonary disability was then estimated from the clinical signs and symptoms into one of five categories (Fig. 1).[1]

The following pulmonary function tests were done on all persons. [1] The single-breath pulmonary diffusion test ($D_L$) of Forster[4] with a breath-holding period of ten seconds was done in duplicate, and the average of the two values was included in the data to estimate the diffusing capacity of the 34 normal subjects and 87 patients with all degrees of pulmonary emphysema and fibrosis. [2] Maximal voluntary ventilation at a free respiratory rate ($MVV_f$) and one-second forced expiratory volume ($FEV_1$) were done in triplicate, and the best performance was selected to be included in the data. The spiro-

**Class 0**

Normal persons, with no signs, symptoms, historic, or laboratory evidence of pulmonary disease

**Class I**

- A History of dyspnea during vigorous exercise, not previously experienced
- B No dyspnea at rest
- C Activity only slightly limited
- D Roentgenologic evidence of a diffuse pulmonary lesion such as fibrosis and emphysema
- E No therapy, such as bronchodilators, required
- F Detectable physical signs of pulmonary disease, such as prolonged expiration, wheezing, and rhonchi
- G No cyanosis at rest or during exercise at any time

**Class II**

- A Dyspnea during moderate exercise, not present previously
- B No complaint of dyspnea at rest
- C Activity limited to moderately heavy exercise
- D Roentgenologic evidence of a diffuse pulmonary lesion
- E Bronchodilator therapy necessary intermittently
- F Demonstrable abnormal physical signs and symptoms, such as prolonged expiration and, occasionally, wheezing and rhonchi
- G No cyanosis at rest or during exercise at any time

**Class III**

- A Dyspnea with slight exercise
- B Periodic dyspnea at rest
- C Activity limited to light exercise
- D Roentgenologic evidence of a moderately advanced diffuse pulmonary lesion
- E Therapy necessary at all times
- F Presence of abnormal pulmonary physical signs and symptoms, such as rales, rhonchi, and prolonged breath sounds
- G Demonstrable cyanosis during exercise

**Class IV**

- A Mild dyspnea at rest
- B Inability to perform any type of physical exercise without discomfort and dyspnea
- C Marked diffuse pulmonary findings on roentgenograms
- D Active intense therapy necessary for pulmonary disease
- E Presence of abnormal signs and symptoms, such as prolonged expiratory breath sounds, wheezing, and depressed diaphragm
- F Possible cyanosis at rest, always during exercise
- G Episodes of right heart failure secondary to pulmonary disease

**Class V**

- A Marked dyspnea at rest
- B Inability to perform any degree of activity without severe dyspnea
- C Diffuse severe pulmonary lesions evident on roentgenograms
- D Bronchodilator therapy necessary at all times
- E Evidence of advanced signs and symptoms of pulmonary disease
- F Increased respiratory rate at all times
- G Cyanosis at all times
- H Episodes of right heart failure, secondary to pulmonary disease

Fig. 1. Physiologic clinical classification of pulmonary disability

graphic tracings were measured according to the methods outlined in the Veterans Administration-Army cooperative study of pulmonary function.[1,5] [3] The functional residual capacities and residual volumes were determined with the method of Darling and Cournand.[6]

The gas analyses were done with the Wilson-Jay chromatographic analyzer, Model 225.[1]

No patients who had clinical signs and symptoms of acute bronchitis or acute pulmonary infection were included in the study.

The nomogram was constructed by the method of Levene.[7]

All pulmonary function, functional residual capacities, and pulmonary diffusion tests were performed by the same team.

Pearson's product moment correlation coefficient was used to determine the level of correlation among the degrees of pulmonary disability and the pulmonary function tests as well as the Forster single-breath pulmonary diffusion tests.

The data were placed on punch cards and tapes and analyzed with a CDC 1604 computer using the multiple regression technique.

An equation and a nomogram made up of one dependent variable, DPD, and four independent variables, $MVV_f$, $FEV_1$, age, and forced vital capacity were published by Wilson.[1]

The data in this paper are extended to include DL as one of the parameters of establishing the DPD.

## RESULTS

There was no attempt to separate smokers and nonsmokers in this study.

The number of patients and the physiologic parameters measured in each group are listed in Table 2. Group 0 is the data for the normal persons. The mean $MVV_f$ is 154.4 ± 25.7 liters per minute; the DL was 31.3 ± 8.3 cc. per millimeter of mercury per minute. The $FEV_1$ was 3.9 ± 0.52, and the age was 37.5 ± 10.1 years.

TABLE 2

MEAN AND STANDARD DEVIATIONS OF THE PHYSIOLOGIC VARIABLES USED IN THIS STUDY

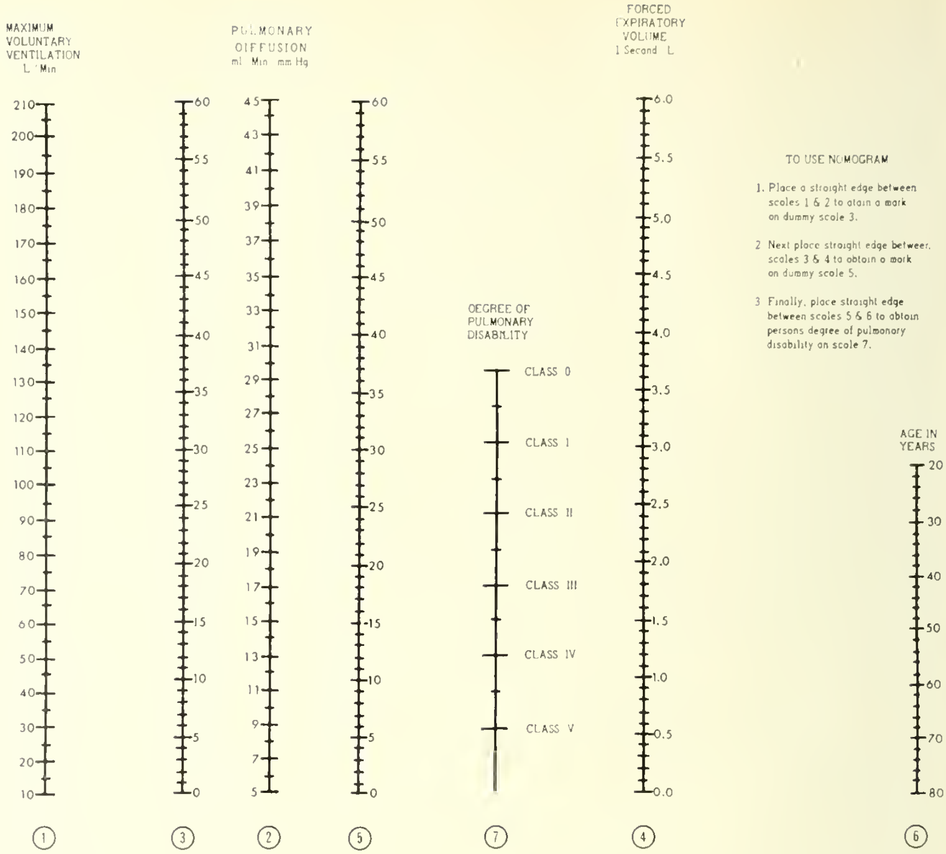
| *Group and No. of patients* | *Statistic* | *$MVV_f$ (liters per minute)* | *DL (cc. per mm. Hg per min.)* | *$FEV_1$ (liters)* | *Age (years)* |
|---|---|---|---|---|---|
| 0 | Mean | 154.5 | 31.3 | 3.91 | 37.5 |
| 34 | Standard deviation | ±25.7 | ±8.34 | ±0.52 | ±10.1 |
| I | Mean | 121.2 | 28.5 | 3.25 | 48.8 |
| 11 | Standard deviation | ±27.0 | ±7.11 | ±0.52 | ±13.1 |
| II | Mean | 120.2 | 23.0 | 3.20 | 53.5 |
| 15 | Standard deviation | ±30.8 | ±5.21 | ±0.83 | ±15.3 |
| III | Mean | 92.9 | 21.5 | 2.48 | 57.8 |
| 25 | Standard deviation | ±43.2 | ±5.69 | ±1.04 | ±13.5 |
| IV | Mean | 52.4 | 17.5 | 1.56 | 60.6 |
| 26 | Standard deviation | ±24.9 | ±6.69 | ±0.70 | ±11.8 |
| V | Mean | 37.7 | 8.8 | 1.11 | 60.1 |
| 10 | Standard deviation | ±30.1 | ±5.94 | ±0.53 | ±11.4 |

TABLE 3

ANALYSIS OF VARIANCE FOR THE MULTIPLE LINEAR REGRESSION

| | *Variable No.* | *Mean* | *Standard deviation* | *Regression coefficient* | *Computed T-value* | *Partial correlation coefficient* |
|---|---|---|---|---|---|---|
| MVV | 1 | 102.47107 | 52.08584 | 0.81808 | 2.10615 | 0.19192 |
| DL | 2 | 23.20149 | 9.43158 | 6.59998 | 7.33834 | 0.56307 |
| $FEV_1$ | 3 | 2.71868 | 1.23161 | 44.03306 | 2.73292 | 0.24595 |
| Age | 4 | 51.51240 | 15.30475 | −1.81822 | −3.11698 | −0.27800 |
| DPD | 5 | 376.85850 | 173.08973 | | | |

| *Source of variation* | *Degrees of freedom* | *F value* |
|---|---|---|
| Due to regression | 4 | 110.1626 |
| Deviation about regression | 116 | |
| Total | 120 | |


MAXIMUM VOLUNTARY VENTILATION L/Min
PULMONARY DIFFUSION ml/Min/mm Hg
DEGREE OF PULMONARY DISABILITY
CLASS 0
CLASS I
CLASS II
CLASS III
CLASS IV
CLASS V
FORCED EXPIRATORY VOLUME 1 Second L
AGE IN YEARS
①
③
②
⑤
⑦
④
⑥

TO USE NOMOGRAM

1. Place a straight edge between scales 1 & 2 to otain a mark on dummy scale 3.
2. Next place straight edge between scales 3 & 4 to obtain a mark on dummy scale 5.
3. Finally, place straight edge between scales 5 & 6 to obtain persons degree of pulmonary disability on scale 7.

Fig. 2. A nomogram was constructed using $D_L$, MVV$_f$, FEV$_1$, and age as physiologic parameters to calculate the DPD.

There was a clear separation of groups 0 and I by the MVV$_f$ but not by $D_L$ and FEV$_1$ nor age. There was no significant difference between Groups I and II.

Although there was a small difference among the means of all parameters between groups II and III, the degree of separation was less than 1 S.D. and not highly significant, except in the MVV$_f$ test. The same is true in groups II and IV.

The difference between the means of the variables of groups IV and V is significant.

The difference among the means of the variables of groups 0, I, III, and V are highly significant. The difference in ages of II, III, IV, and V is not significant. Thus, the differences among these groups are due to the other variables. The largest difference in mean ages was between groups 0 and I.

The analysis of variance in Table 3 shows that the overall regression is significant and, although dependent, the computed T values indicate each variable contributes significantly to the separation of the groups.

The following equation was derived from pulmonary spirometric data and the single-breath pulmonary diffusion test of Forster:[4] DPD $= 113.85 + (0.818)\ \text{MVV}_f + (6.60)\ D_L + 44.04\ \text{FEV}_1 - 1.818$ age.

From this equation, a nomogram was constructed to simplify its solution (Fig. 2). It was used to establish the degree of pulmonary disability of the patients who had clinical evidence

TABLE 4

CORRELATION COEFFICIENTS

| | *MVV (liter per minute)* | *$D_L$ (cc. per minute per mm. Hg)* | *FEV$_1$ (liters)* | *Age (years)* | *DPD (classes 0-6)* |
|---|---|---|---|---|---|
| MVV$_f$ | 1.00000 | 0.49297 | 0.92834 | –0.56412 | 0.80502 |
| $D_L$ | 0.49297 | 1.00000 | 0.48476 | –0.33205 | 0.68625 |
| FEV$_1$ | 0.92834 | 0.48476 | 1.00000 | –0.54468 | 0.80375 |
| Age | –0.56412 | –0.33205 | –0.54468 | 1.00000 | –0.58972 |
| DPD | 0.80502 | 0.68625 | 0.80375 | –0.58972 | 1.00000 |

of decreased pulmonary diffusion. Table 4 lists the correlation coefficients among the statistically dependent variable, DPD, and the independent variables, $MVV_f$, $FEV_1$, age, and DL. Although the degree of correlation was high among the variables, this did not necessarily mean that each was measuring precisely the same pulmonary physiologic parameter. The correlation coefficient among DPD, $MVV_f$, and $FEV_1$ was 0.8, which is in keeping with data previously published.[1] In these data, one notes the correlation between the $FEV_1$ and the $MVV_f$ was 0.9. This finding is the same as that found by Miller and associates[8] and Wilson and associates.[1]

In Figure 3, the clinical DPD is plotted along the ordinate and the DL is plotted along the abscissa to graphically illustrate the relationship between pulmonary pathologic physiology and diffusion of carbon monoxide across the alveolar membrane. The coefficient correlation was 0.7.

Table 3 lists the data for the analysis of variance with the data summary for the multiple linear regression. All experimental data were lumped together for this calculation. This table includes mean, standard deviations, regression coefficients as seen in the equation, computed T values, and partial correlation coefficients.

The computed T test[9] gives information concerning the importance of each of the variables in the determination of pulmonary disability. The computed T value for DL listed in Table 3 was 7.34; for the $MVV_f$, 2.11; for $FEV_1$, 2.73; and for age, —3.11. These values are computed to test the hypothesis that one of the regression coefficients is equal to zero and that variable could be eliminated without decreasing the usefulness of the equation in the prediction of the DPD.

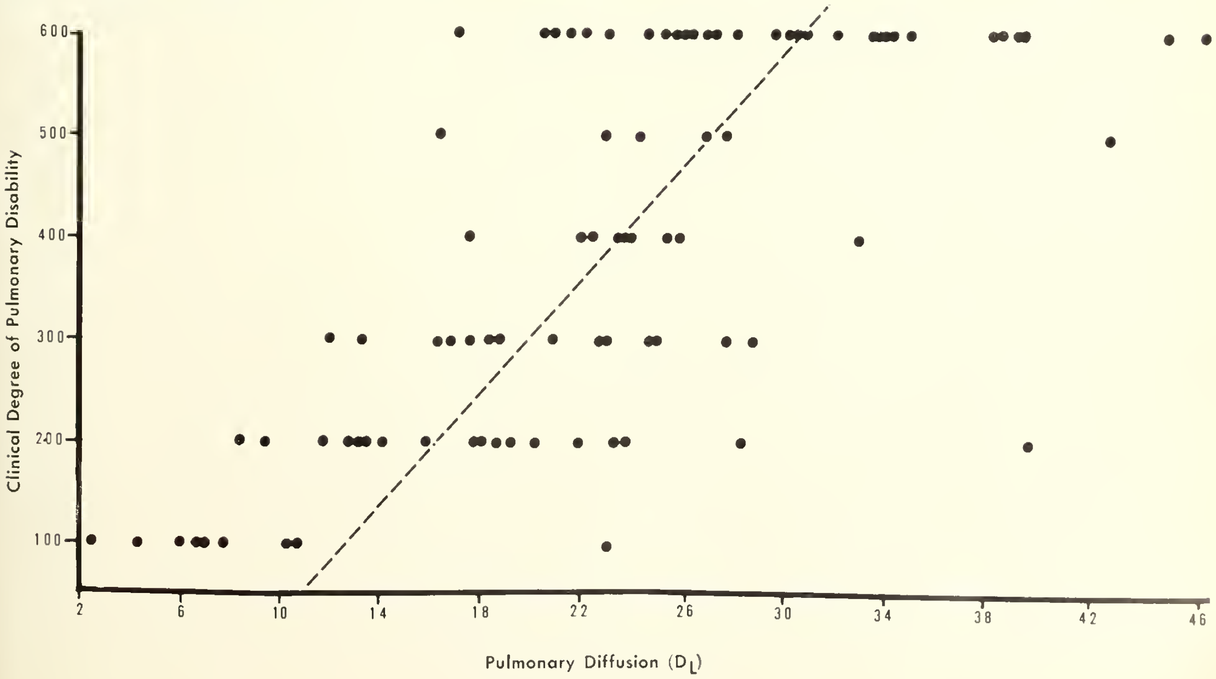
The F test[8] yields information regarding the applicability of each of the individual regression coefficients combined into a single test to evaluate these physiologic parameters as a group in the prediction of the degree of pulmonary disability. The F value was 110.2 and p was $<0.01$.

It is noted that the partial correlation coefficient for DL was 0.6, which indicates a high degree of impaired diffusion in the patients. The reason for this high degree of partial correlation is that in the diffusion study, the patients were selected because there was clinical evidence of a pulmonary diffusion defect, such as fibrosis, sarcoidosis, and advanced pulmonary emphysema.

The standard deviation of all variables was high because the values for normal persons were combined with the extremely low values of the patients for the purpose of statistical analysis.

The average age of all persons included in the study was 52, with a a range of 24 to 76 years. Age in years did significantly affect the values of the variables.

Fig. 3. The pulmonary diffusion data are plotted along the abscissa; the clinical degree of pulmonary disability is plotted along the ordinate.



## DISCUSSION

All patients studied had primary pulmonary disease and no evidence or clinical history of cardiac disease. The presence of cardiac disease or the history of episodes of cardiac failure would lead one to conclude that an unspecified degree of the pulmonary disability could be attributed to this cause.

Pulmonary disability was considered to exist when the patient was unable to perform the type of labor or strenuous muscular exercise without signs and symptoms of difficult breathing which he had not previously experienced when performing the same degree of work or muscular exercise.

Age was included as one of the parameters in the determination of the DPD. It is known that all pulmonary functions decrease with age. Therefore, the age factor in the nomogram was selected as one of the variables for determining pulmonary disability. A 20-year-old man having the same degree of pulmonary disease as a 60-year-old man would have less pulmonary disability than the latter person.

In establishing the method of clinically classifying the DPD of patients, one had to consider the levels of muscular activity characteristic of the patient's occupation and levels of muscular exercise in addition to that of his occupation such as mowing the lawn with or without a power-driven machine, hunting, fishing, playing golf, or many other types of activity which had been part of his life before the onset of pulmonary disease.

In this study, as many patients as could be obtained with X-ray evidence and a history of a pulmonary diffusion defect were included.

Physical signs and symptoms of pulmonary disease were used as objective criteria for placing the patients in the categories containing patients with pulmonary disease.

For example, the presence of clinical cyanosis was used as a criterion for placing the individuals in class III, IV, or V. Cyanosis is caused by diseases other than pulmonary disease, thus decreasing the statistical weight or value in placing the patients in the various categories. However, if one rules out other types of disease, it is a valuable criterion of advanced pulmonary disease.

The inclusion of cyanosis as one of the clinical parameters in the establishment of the category or clinical degree of pulmonary disability was done for the purpose of categorizing the patients into the different classes. There is no question concerning the knowledge of the difficulties the physician has in determining the presence or absence of small degrees of cyanosis. It was not practical nor feasible to do arterial blood oxyhemoglobin contents and arterial oxygen tensions for the purpose of the clinical classification of pulmonary disability as determined in this paper.

Those patients with predominantly pulmonary ventilation defects, determined by the commonly used pulmonary function tests, can be adequately evaluated and classified with the $MVV_f$, $FEV_1$, residual volume or total lung capacity, a good medical history, physical examination, and X-ray of the chest.[1] A ventilation defect of any type, if severe enough, will usually decrease the $D_L$. However, such pulmonary pathologic states as fibrosis, edema, chronic or acute alveolar infections, and circulatory failure will superimpose, on the ventilation defect, an alveolar-capillary respiratory gas diffusion baffle. Therefore, if the group of function tests were to accurately estimate the degree of pulmonary disability in the presence of a lesion which will impair gas diffusion across the alveolar capillary membrane, a measurement of respiratory gas diffusion must be included, as shown in the equation.

In severe chronic pulmonary disease, such as fibrosis and emphysema, it is not possible to eliminate completely chronic bronchitis and some degree of chronic pulmonary infection; therefore, these factors were considered to play a role in the degree of pulmonary disability.

All patients were studied without bronchodilator or aerosol therapy.

The type and frequency of therapy, such as bronchodilators' intermittent positive-pressure breathing, antibiotics for upper respiratory and pulmonary infections, and other types of therapeutic measures, were considered to contribute significantly to the clinical evaluation of DPD and were used as criteria for categorizing the patients.

In the presence of a significant degree of alveolar capillary block for any reason other than an acute infection, which would subside with treatment, the small degree of improvement of ventilation obtained by treating the patient with antibiotics, bronchodilators, and aerosol therapy would not significantly change the DPD. The single-breath pulmonary diffusion tests would remain essentially the same. The pathologic factors impeding the diffusion of oxygen across the alveolar capillary membrane would still be present, even though the air in the bronchi and bronchioles flows at a greater velocity, with less turbulence, and is more evenly distributed.

The patient's inability to perform heavy muscular exercise or varying degrees of muscular work continued to be impeded in the presence of pulmonary fibrosis, diseases such as sarcoidosis, varying degrees of pulmonary emphysema and chronic inflammation, in spite of the small degrees of clinical improvement with the use of bronchodilators, antibiotics, and aerosol therapy administered with the IPPB apparatus.

In a previous study, Wilson and co-workers[1] designed a nomogram to be used when the ventilation tests are available. In conjunction with the nomogram, the clinical classification 0-5 was used to obtain a thorough evaluation of the patient in addition to the classification with the laboratory tests. This nomogram and clinical classification of DPD was not adequate to classify those patients with alveolar capillary block.

In patients who have X-ray evidence of pulmonary fibrosis, diffusion of the respiratory gases across the alveolar capillary membrane is impaired. A complete evaluation of this type of pulmonary disease requires the use of the nomogram. Therefore, the application of this nomogram will be limited to patients who have clinical and laboratory evidence of an alveolar capillary block. The directions for its use are written on the nomogram. For complete evaluation of the pulmonary disability, the criteria in the clinical classification previously published should be used with the nomogram.

The DPD should be established at a time when the patient is free of acute bronchopulmonary infections and has reached a relatively stable state. In the presence of a significant degree of chronic pulmonary pathology, the basic causes of abnormal pulmonary function will continue to be present even though the patient has been optimally treated with bronchodilators with or without intermittent positive-pressure breathing. If a patient has a decrease in the lumen of the bronchial airways because of smooth muscle spasm for any reason, it is logical to assume that the DPD would be determined during an episode of respiratory distress and after being optimally treated with bronchodilators.

In the case of a patient who received bronchodilator therapy on a continuing basis, in the presence of a lesser degree of chronic pulmonary pathology and disability, one would want to know the degree of pulmonary disability both with and without bronchodilator therapy. It would then be possible to estimate with a greater degree of accuracy the occupational work load he would be able to tolerate with his best possible pulmonary function.

## SUMMARY

The need for a general classification of the degree of pulmonary disability for governmental pension purposes, industrial disability determinations, insurance claims, and use in the diagnosis and therapy of pulmonary disease has been brought into focus during the past four decades with the large increase in health and welfare benefits for patients because of age and disease.

A clinical and laboratory classification of the five degrees of pulmonary disability was formulated from the clinical histories and the most commonly used pulmonary function tests, including the single-breath pulmonary diffusion test of Forster.

General application of the clinical and mathematical classification of pulmonary disability is feasible and will provide a uniform system of classifying the degree of pulmonary disability.

The inclusion of the single-breath pulmonary diffusion test is necessary for complete evaluation of those patients where there is clinical and historical data to lead one to suspect a pulmonary diffusion defect or an alveolar capillary block.

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Supported in part by NIH grant (HE-02153-09) and a grant from the Smith, Kline, and French Foundation

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# The Erythroblastotic Maternal Syndrome

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Contemporary obstetrical texts devote a considerable amount of material to the fetal effects of iso-immunization and to the management of erythroblastosis. Little or nothing, however, can be found on the effects of severe fetal hemolytic disease on the mother. The erythroblastotic maternal syndrome was described by Potter[1] twenty years ago; since then, the papers of Kaiser,[2] Goodlin,[3] and Nicolay[4] in this country, and O'Driscoll[5] in Ireland have emphasized the lack of general formal knowledge concerning the syndrome and have developed the diagnostic criterion which separates the erythroblastotic syndrome in the mother from preeclamptic toxemia of pregnancy. Because of the relationship between the syndrome and both toxemia of pregnancy and hemolytic disease of the newborn, it has been described in the literature in association with severe iso-immunization, fetal death, or fetal hydrops, under the terms "maternal syndrome,"[2,6] "maternal hydrops,"[4] "mirror syndrome,"[3–5] "fluid retention syndrome,"[5] "impending fetal death,"[3] and "pseudotoxemic state."[4]

Recognition of maternal erythroblastotic syndrome is increasingly important because of great increase in the use of spectroscopic examination of the amniotic fluid and the early use of intrauterine fetal transfusion for the treatment of severe erythroblastosis fetalis. Once the syndrome has developed, the fetal salvage rate is zero. Whether the fetal-maternal course in the syndrome could be modified by the early use of intrauterine transfusion is an intriguing question which, for the present, cannot be answered.

Erythroblastotic maternal syndrome is characterized by: [1] rapid accumulation of fluid, resistant to diuretics, usually between the twenty-fifth and thirty-fifth week of gestation in a severely iso-immunized patient, [2] the absence of hypertension and proteinuria, and [3] fetal or neonatal death from hydrops fetalis shortly after the onset of the maternal edema. There is commonly a history of previous fetal or neonatal deaths in the patients who develop the syndrome; the clinical course in succeeding pregnancies is one of increasing severity.

The incidence of the syndrome is low; John[6] states that in Cardiff City the incidence is about 1 in 7,000 births. However, the incidence in mothers whose pregnancies terminate in fetal hydrops is quite high; from 20% to 70% of these patients will have some evidence of toxemia. If the typical preeclamptic toxemias are eliminated, then somewhat less than one-half of the mothers with hydropic fetuses will develop some evidence of the erythroblastotic maternal syndrome. The case report which is presented below is typical of the course of this syndrome in a patient who developed the syndrome in two successive pregnancies. It also shows that the clinical management of these patients can be quite a problem. The tachycardia described in this case has not been mentioned previously as a part of the erythroblastotic maternal syndrome.

## CASE REPORT

D. W., a 24-year-old gravida five Para 1, type O, RH negative mother was admitted to McKennan Hospital on Feb. 21, 1961, because of excessive weight gain which had averaged over a pound a day for the past four days. Gain at twenty-second week of gestation was twenty pounds. Patient also had persistent tachycardia.

The patient had one living child, following a spontaneous term labor in 1953. The second pregnancy in 1954 went to term and resulted in a neonatal death from erythroblastosis fetalis, following a single exchange transfusion. The following two pregnancies in 1956 and 1958 terminated in prepartum deaths from fetal hydrops.

At admission and throughout her subsequent course the patient was normotensive. Extensive dependent edema was present. There was no clinical or roentgenological evidence of cardiac failure. The electrocardiogram revealed a sinus tachycardia of 140 with shortened PR intervals and moderate T wave changes. The patient was placed on bed rest, with a restricted sodium, high protein diet. She was given hydrochlorothiazide 50 mg. twice a day and, on the advice of the medical consultant, was digitalized.

During the second week of hospital stay fetal death occurred. Following this a rapid improvement in the patient's condition was evident; she lost eight pounds and her pulse stabilized at the rate of 100. After induc-

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tion of labor, using a concentrated oxytocin (Pitocin®) solution, failed, she was discharged on March 7, 1961. One month later the patient delivered, spontaneously, a 610 gm. macerated fetus with an attached 520 gm. placenta. A diagnosis of fetal hydrops was confirmed by the department of pathology. A summary of some of the laboratory findings during this first admission follows.

| *Titers* | | *Blood* | | *Urine* |
|---|---|---|---|---|
| Coombs | 1:256 | Hematocrit | 28% | Negative albumin |
| Albumin | 1:32 | Protein, total | 4.9 gm. | Casts |
| Saline, negative | | BUN | 9.0 mg. percent | Cells (sig. no.) |
| | | Urea | 18 mg. percent | |

The patient was seen again for prenatal care three years later. On April 22, 1964, at about the thirtieth week of gestation, the patient was admitted to McKennan Hospital because of a weight gain of over five pounds over the preceding five days. The total weight gain at the time of admission was twenty-three pounds, and a marked pitting edema of the lower extremities was present. The edema was unresponsive to oral diuretics. The blood pressure on admission was 118/80 and the pulse rate 88. Fetal heart tones were present with a range of 120 to 158. The patient's only complaint was a moderate generalized pruritus. Three days after admission no FHT's were obtained, and despite fetal death the clinical condition of the patient deteriorated; she became listless and complained of dyspnea. By her eighth hospital day she had gained an additional eight pounds and the edema became generalized. The pulse rate increased to over 100 with a range of 104 to 136. Urinary output over a twenty-four-hour period prior to surgery showed a high of 2,465 cc. the first day intake and output was recorded (the fifth hospital day), and a low of 1,150 cc. the following day. An increasing azotemia appeared between the fifth and tenth hospital day. The patient remained normotensive; the highest recorded blood pressure was 142/82. There was no albuminuria.

Bed rest and diuretics, including mercurial, hydrochlorothiazide, and spironolactone (Aldactone®), had no effect on the fluid retention. Medical induction of labor using a concentrated solution of Pitocin in 5% glucose given by intravenous drip over a seventy-two-hour period failed. Amniocentesis was done, but no fluid was obtained. The patient was digitalized rapidly on the advice of the medical consultant, and on the tenth hospital day a classical caesarean section was done under general anesthesia. The fetus was edematous, macerated, weighed 1,667 gm., and appeared to be typical of an erythroblastotic, hydropic fetus. No measurable amount of amniotic fluid was present. The placenta was so hypertrophic and edematous it covered the entire uterine surface and had to be removed in fragments. The abridged report of the department of pathology was as follows:

1] *Placenta gross.* The specimen weighs 1,303 gm. and consists of bulky, irregular, edematous, hyperemic, placental tissue with minimal fibrous trabeculation.

2] *Placenta microscopic.* Villi of varying size and shape with moderate to mild trophoblastic proliferation is present. Areas of erythropoiesis are scattered throughout the stroma and are primarily intracapillary.

The patient's subsequent course showed a rapid improvement after surgery. Spontaneous diuresis began the first postoperative day; urinary output varied from 5,055 cc. the first twenty-four hours to 3,775 cc. on the fifth postoperative day. The total urinary output during the first four days following surgery was 13,875 cc. There was a corresponding weight loss of 29 pounds three days post partum. The BUN and blood urea values declined to subnormal levels during the period of diuresis and then returned to the normal ranges before the patient was discharged. The pulse after surgery varied from a rate of 90 to a rate of 100. A summary of some of the pertinent laboratory work follows.

### COMMENT AND DISCUSSION

The amount of fluid retained by patients with the erythroblastotic maternal syndrome appears to be proportional to the degree or extent of

| BEFORE DELIVERY | |
|---|---|
| *Titers* | |
| Coombs | 1:256 |
| Albumin | 1:64 |
| Saline | 1:1 |
| *Urine* | |
| Specific gravity | 1.015 |
| Albumin | none |
| Microscopic | 8 to 10 WBC |
| *Blood* | |
| Hematocrit | 30 |
| RBC | 3,300,000 |
| Chlorides | 110 mEq. per liter |
| Sodium | 138 mEq. per liter |
| BUN | 29.3 mg. percent |
| Urea | 63.5 mg. percent |
| Protein total | 4.4 gm. |
| Albumin | 2.0 gm. |
| Globulin | 2.5 gm. |
| A/G ratio | 0.8/1 |
| Bilirubin total | |
| Fibrin index | 305 mg. percent |
| *Function tests* | |
| BSP | 22% (46 min.) |
| P.S.P. | 9.2% (15 min.) |
| | 13.9% (1 hour) |
| | 16.8% (2 hours) |

| AFTER DELIVERY | | |
|---|---|---|
| *Urine* | | |
| Specific gravity | 1.007 | |
| Albumin | trace | |
| Microscopic | 15 to 20 WBC | |
| *Blood* | | |
| Hematocrit | 29 | |
| BUN | 6.7 mg. percent | 9.8 mg. percent |
| Urea | 14.3 mg. percent | |
| Protein total | | 6.4 gm. |
| Albumin | | 3.5 gm. |
| Globulin | | 2.1 gm. |
| A/G ratio | | 1.2/1 |
| Bilirubin total | | 0.3 |
| *Function tests* | | |
| BSP | .5% (45 min.) | |

maternal iso-immunization; edema may accumulate rapidly, over a period of a few days, with a weight gain in excess of one pound a day. The edema is initially dependent but, as fluid retention increases, it tends to become generalized. The clinical picture resembles that seen in the patient with a nephrotic syndrome, but hypoproteinemia rather than proteinuria is present and may, in part, account for the fluid retention. There is general agreement that the edema fluid is resistant to most or all of the common diuretics, and in this case it appeared that the greater the fluid retention the more resistant it became to resolution by diuretics.

The tachycardia which was an important and alarming clinical feature of this case has not been reported by others; the heart rate appeared to be proportional to the degree of fluid retention, hypoproteinemia, and azotemia. The origin of the tachycardia is obscure but does not appear to be correlated to the low hematocrit values obtained in this patient.

Both Goodlin[3] and Nicolay[4] found that hydramnios was a common feature of their cases; this was not one of the findings in this case. So little fluid was found at surgery that spontaneous rupture of the membranes could have been assumed to have occurred, although there was no evidence to support this assumption.

The generalized pruritus mentioned by Goodlin[3] was present in this case. The patient was not clinically jaundiced, and the total van den Bergh test, which was done at the time of hospital discharge, was within the normal range. The elevation of the BSP and the low values of the serum proteins do, however, suggest that liver dysfunction may play a role in the syndrome.

Convulsions or other symptoms suggestive of CNS irritability have not been reported, with the exception of a case described by Speck,[7] in which an iso-immunized patient had an eclamptic convulsion at the sixteenth week of gestation, but a diagnosis of fetal hydrops was not made.

The biochemical changes in the blood of this patient, as well as in patients reported by others, parallel the changes seen in preeclamptic toxemia in some instances and, in others, changes seen in renal disease. As in toxemia, serum proteins were depressed, and serum electrolytes (Na and Cl) were within the normal range of values. Blood uric acid values were elevated. The hematocrits obtained were low, and blood fibrinogen concentration was within the normal range, which is contrary to the usual findings in severe preeclamptic toxemia. Elevated values for blood urea and blood urea nitrogen, however, are more suggestive of renal disease or renal dysfunction than toxemia.

As a crude index of renal function, the increased values of the BUN reflect a marked reduction in glomerular filtration rate. The decline in the volume of urine during the twenty-four-hour periods which were marked by rapid fluid retention and the decline in the BUN following the period of diuresis after surgery would tend to confirm this idea.

The results of both the BSP and P.S.P. function tests would indicate a temporary impairment of hepatic and renal function, since there was a return to normal values post partum.

The etiology of the erythroblastotic maternal syndrome is speculative; the large edematous, hypertrophic placenta, the fetal hydrops, and the maternal water retention are probably due to a common biomechanism. Placental changes may be a result of the progressive fetal changes, particularly anoxia, rather than an etiological factor in the maternal water retention. In fetal hydrops gross and microscopic appearance of the placenta may be the same regardless of presence of erythroblastotic maternal syndrome.

## SUMMARY

A maternal syndrome characterized by rapid fluid retention, in the absence of significant hypertension and proteinuria, and leading invariably to fetal or neonatal death from hydrops fetalis is reviewed, and a typical case presented. The importance of the recognition of this syndrome in the light of recent advances in the techniques for the treatment of severely iso-immunized pregnant patients is emphasized.

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The author wishes to express his appreciation to E. W. Sanderson, M.D., the medical consultant in this case, and to A. K. Myrabo, M.D., and T. R. Anderson, M.D., for their studies of the tissues submitted. Brooks Ranney, M.D., was kind enough to review the manuscript.

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# Causes of Confusion as to the Meaning of Allergy to the Otolaryngologist: Part II

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### CLASSIFICATION OF ALLERGIC HYPERSENSITIVITY INTO TYPES

The reaction of many allergists to the suggestion that the reactions of hypersensitivity should be divided into types on the basis of the reactions obtained to skin tests (or by any other criterion) is apt to be, "Why should I burden my mind with such useless nonsense?" It will be seen, however, that the differences accentuated by categorization are of considerable clinical and therapeutic importance and clarify the concept of "allergy" and what should be done about it.

Von Pirquet selected the reaction to tuberculin as the primordial example of an indicator of the changed state of the organism produced by allergy. The so-called diagnostic skin tests for "allergy" (actually hypersensitivity) developed from the demonstration that a delayed type reaction could be produced by rubbing tuberculin into a scratch in the skin and the much earlier demonstration by Blackley (1873)[27] that a wheal and flare reaction could be produced in the skin of hay fever victims also by rubbing pollen of grasses into a scratch. Dale and Laidlaw[28] found in 1911 that the manifestations of both anaphylaxis and hypersensitivity are associated with the release of histamine. Since then anaphylaxis and hypersensitivity have been used almost interchangeably to indicate an allergic adaptative process which results in injury to the organism and its cells.

In the early days, to the clinicians concerned, hypersensitivity was hypersensitivity. In 1920 and 1923, however, 2 papers of Coca appeared, the second in collaboration with Cooke,[29,30] in which they pointed out that only the clinical appearance of hypersensitivity was being considered without attention to the considerable differences which, apparently, might be present in its nature and causation. Hypersensitivity was divided into "hypersensitiveness of infection" (which is now better known as delayed or bacterial type hypersensitivity) and the immediate type of hypersensitivity. He subdivided the immediate type of hypersensitivity into atopy, of which hay fever is the prototype, and the conventional anaphylactic type of hypersensitivity. Coca believed that the important difference between atopy and anaphylaxis is that atopic patients can be only partly desensitized after many injections of an extract of the offending atopen, whereas anaphylactic men and animals can be desensitized fully, for a certain period, by 1 or more subshock doses of antigen. He also felt that the development of the atopic type of hypersensitivity is determined, for the greater part, by hereditary factors, whereas the development of the anaphylactic type of hypersensitivity is influenced little, if at all, by predetermination. In his book *Familial Non-Reagenic Food Allergy* (1953) he[31] suggested the term "idioblapsis" for the anaphylactic type hypersensitivity which he believed is usual to foods. He also mentioned that a major difference between the atopic and anaphylactic types of immediate hypersensitivity is that atopic reagins are so extremely different from both the

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bivalent and the monovalent conventional anaphylactic antibodies. He found the only similarity in the 2 types of immediate hypersensitivity reactions to lie in the release of histamine. These observations of Coca have recently received very strong confirmation by the Ishizakas.[32] They announced that "reagin is a unique immunoglobulin and one that has not been described before. It is associated with a totally distinct but minor component of the serum proteins which we have tentatively designated gamma E globulin."

The fact that such a long time passed before it was recognized that there are significant differences between these 3 types of allergy probably depends on the difficulty that may be encountered in actual practice in differentiating, by the results of skin tests, the immediate anaphylactic type of "allergy" from the delayed type, on the one hand, and the anaphylactic type of hypersensitivity from the atopic type on the other. This is in part due to the fact that pure antigens are unobtainable and that factors producing all 3 types of hypersensitivity, although to different sensitivity levels, may be present in a single antigen. The skin test to an anaphylactic type antigen is typically that of a red irregularly marginated wheal with often a few petechiae in the center and an irregular and sometimes spotty flare—a reaction which is largely a thrombophlebitic phenomenon caused to a major degree by other vasoactive chemicals than histamine. In comparison, the skin test reaction in atopic type allergic hypersensitivity typically has a white sharply marginated wheal and a brighter, homogenous, more limited, and more definitely marginated flare (the triple response of Lewis) due to the release of histamine with axone reflex flare. The differences in the 2 tests are often far from obvious, even to an experienced observer.[33]

The skin test reaction in the anaphylactic type of hypersensitivity is often referred to as the "Arthus type." In certain instances an Arthus type reaction may be more delayed in its appearance than one of the delayed type. It, therefore, must be kept in mind that in the terminology of the classification suggested "delayed" and "immediate" do not refer to a temporal duration but rather to an underlying pathophysiology.

Rich[2] believed that the immediate types of hypersensitivity have so much in common and so little in difference that it is reasonable to regard them as merely different manifestations of a single type of hypersensitivity. He gave a clear explanation of the difference between a generalized anaphylactic reaction (anaphylactic shock) and a localized anaphylactic type reaction. He stated, "When a foreign protein enters the tissues, by whatever portal of entry, a state of hypersensitivity may ensue which may lead to sudden collapse and even death if at a later time the same protein finds its way into the circulation in sufficient amount. This dramatic effect is termed anaphylactic shock. The entry of a smaller amount of the antigen into the sensitized body (or indeed larger amounts if the level of sensitization is not so highly developed) may lead to generalized symptoms of a lesser degree such as serum sickness or to more localized symptoms such as vasomotor rhinitis or asthma. An individual so sensitized will ordinarily react with a prompt and evanescent wheal and erythema at any cutaneous site into which the protein is injected. Antibody specific for the protein in question is demonstrable in the circulation and this state of hypersensitivity can be transferred to a normal individual by an injection of the antibody-containing serum of the hypersensitive one. If, however, a foreign protein be introduced repeatedly into the tissues at intervals of several days or more instead of only once, the anaphylactic type hypersensitivity described above will become established, but in addition, the capacity to react locally at any tissue site at which the protein is injected becomes markedly intensified and a thrombophlebitic reaction with haemorrhage and necrosis may appear and be prolonged." The fact that Arthus type hypersensitivity can be transferred in the same way as the anaphylactic type, taken together with the fact that the degree or level of Arthus type hypersensitivity is paralleled by the amount of anaphylactic antibody in the circulation, caused Rich to conclude that the capacity to react with the intensity of the Arthus reaction is simply a manifestation of a higher degree of anaphylactic hypersensitivity. It is on this basis that "Arthus type" and "anaphylactic type" hypersenitivity are used synonymously in the classification suggested by Voorhorst.[34]

Because the serum globulin fraction in atopic type hypersensitivity which unites with skin cells may also unite with atopens, Augustin[35] has suggested that reagins have 2 active determinant groups with slightly different molecular configuration—1 to conjugate with a complementary configuration on the skin cell and the other to act in a similar manner with the atopen. Stanworth[36] proposed that if the reagin molecule's skin attaching site is in fact a duplicate of a receptor group directed against a specific allergenic determinant of the allergen, atopy could be considered a form of autoallergy as the predisposed individual produces antibodies directed against allergenic determinant groups in his own epithelial tissues which are similar to those of the responsible atopen.

Loveless[37] found that hyposensitization attempts in the atopic type of immediate hypersensitivity are associated with the development of monovalent blocking antibody in the blood serum but that the triple response wheal and flare does not seem to be altered by hyposensitization. This observation has also been made by Voorhorst.[34]

Rich[2] stated that even though antibodies cannot be precipitated from the serum in atopy, they must be present because the hypersensitivity can be transferred as in the anaphylactic type allergy. He suggested that local conditions must be in some way unfavorable to the phenomenon of precipitation.

Bearing in mind the evidence, and the deductions made from it by various commentators, it does not seem too imaginative to suggest that the atopic type of immediate hypersensitivity is very similar, if not identical to, the anaphylactic type with the exception that there is in atopy an additional antibody developed from a globulin fraction separate from the conventional immunoglobulins that attaches to skin cells as well as to atopen. It also suggests that while the union of atopen with reagin might damage the cells with histamine release, to the limited degree necessary to produce a strictly localized triple response reaction in the skin, such union is not the trigger for the more diffuse hypersensitivity reaction in the "shock organs" and the organism as a whole. It seems more likely that the trigger is the augmentation of an inactivated toxic enzyme-substrate complex in the cells of the shock organ or of the body generally, as the hypotheses of Campbell and Garvey[23] and of Godlowski[22] suggest.

The statement of Miles, previously quoted, would suggest that while the reactions to the skin test in typical immediate type hypersensitivity and typical delayed type hypersensitivity are distinctly different, the general hypersensitivity reactions in the 2 types are extremely similar and probably the same.

Brocklehurst[33] stated that attempts to follow the hypersensitivity reaction step by step in "allergic" tissues have been directed almost exclusively to reactions of the immediate type; the biological and pharmacological events of the delayed type of reaction remain practically unknown. He finds that while it is generally conceded that histamine is the chemical mediator playing the major role in immediate type hypersensitivity, it is known that at least 2 other substances contribute to the symptoms resulting from hypersensitivity reactions and several more substances are suspected. He also states that nothing definite is known about the mediators of reaction in the delayed type of hypersensitivity but histamine has not been shown to play any major role.

He accepts the conclusion of Mongar and Schildt that the tissue must be capable of oxidative metabolism for the hypersensitivity reaction to occur. These results clearly indicate an enzymic step or steps as intermediates in the release of histamine. This would appear to support the hypotheses of Godlowski,[22] Campbell and Garvey,[23] and Lawrence[19] that hypersensitivity is a metabolic dysfunction and may not be causally related to antigen-antibody union.

The reasons for classification of hypersensitivity into types would seem to be for the purpose of emphasizing that: (1) there is sufficient variability in the different types of hypersensitivity so that methods of identifying the responsible antigens must necessarily differ; (2) the therapeutic approach to the different types must be, in some respects, different; and (3) classification combats the tendency shown by many conventional clinical allergists to ignore any type of "allergy" but that of atopic type immediate hypersensitivity. The differentiation emphasizes the fact that there is 1 type in which clinically significant skin tests can be achieved in 70 to 80% of the tests, another in which clinically significant skin tests can be secured in no more than 20%, and a third in which the result of skin tests is rarely considered except for a limited number of specific infections. This is because the reaction is delayed and is an inflammatory induration rather than a localized edema resulting from microcirculatory injury.

In limiting the diagnosis of "allergy" to those conditions in which a Lewis triple response type of reaction can be obtained, allergists are strongly influenced by the many immunologists who show a tendency to elevate dogmatically the speculative working hypothesis of AG-AB union to the status of an established fact. One wonders why the rhinologist has not been alert enough to pretend to be shocked by this ploy of the immunologist, as in the past he has practiced such maneuvers very freely in his own behalf. It seems somehow inappropriate, however, for certain conventional clinical allergists to refer to themselves as "allergologists"; "atopists" would seem to be a more truly representative term. It also seems faintly absurd for conventional clinical allergists who maintain this position to wish to arrogate to themselves the sole right to give instruction in allergic theory and method and to confer the right to use allergic therapeutic methods.

In any event, this quirk on the part of many allergists seems to have been a major factor in preventing the identification of many of the allergens active in the production of chronic hyperplastic (polypous) suppurative rhinopansinusitis. Insistence on "standard allergic methods of diagnosis and treatment" completely prevented successful solution of the problem presented by this "spectrum disorder," by ignoring the presence of anaphylactic type and delayed type allergies.

### HYPOSENSITIZATION

Rich[2] stated that in both the immediate and delayed types of hypersenitivity, "the body can be freed partly or completely from its hypersensitivity by subjecting it, under proper conditions, to contact with the specific protein to which it was sensitized." And further, "There are individual differences in the degree to which different subjects can be desensitized by a given procedure, but the supression of hypersensitivity by specific desensitization is a most striking and interesting phenomenon in all forms of acquired hypersensitivity, and one that has important therapeutic implications."

He found that the depression or abolition of hypersensitivity by specific desensitization is not permanent. If the desensitizing injections of the antigen are discontinued, hypersensitivity returns again after the lapse of some days. In order to maintain the state of desensitization, therefore, the injections must be continued regularly. The hypersensitive body may be desensitized not only by contact with the specific antigen, but also by a wide variety of other materials and procedures (so called nonspecific desensitization). In general, nonspecific desensitization is much less constant and effective than specific desensitization, though in individual cases it may be remarkably effective.

Considering these statements of Rich, it is somewhat surprising to find that some observers of the phenomena of hypersensitivity do not have a very high opinion of the supposed beneficial results of desensitization. Frankland,[38] for instance, stated, "Subjective clinical impressions of the patient and his doctor may be very faulty in gauging the results of injection treatment of an allergic complaint such as hay fever unless a very careful double-blind control trial is carried out." This is the best that is said in behalf of hyposensitization in the entire volume, *Clinical Aspects of Immunity*.

Lowell[39] said, in *Immunological Diseases*, "Before we can state that injection therapy produces clinical improvement, we must be able to recognize and measure such improvement under appropriate experimental conditions." However, in seasonal hay fever he did find that "a highly significant difference was observable between treated and untreated groups," but also "at the present time the rationale for injection treatment remains unsettled."

In the latest attack on attempted hyposensitization, after a page of mock appreciation of the allergist and his attainments, Holt stated:[40] "To evaluate specific hyposensitization therapy critically, it is necessary that controlled observations be made and that they be made 'blind' . . . the presence or absence of the specific therapy should be the only variable." He then reports on the effect of hyposensitization in 92 ragweed-sensitive children whose symptoms corresponded with the ragweed season and who had not previously received hyposensitization therapy, based on a previous study done in collaboration with Fontana and Mainland. Approximately half received ragweed injections for four months before the ragweed season, the others receiving a placebo. The conclusions were, "Even if the allergen injections may have had some beneficial effect on some children, the amount of benefit on this group as compared with the placebo group was indistinguishable from the differences that occur in pure randomization experiments. There was found no justification for promising any greater benefit to children treated with allergen than they would manifest if they received placebo injections." At first glance these appear to be justifiably harsh words from an authoritative source but further contemplation suggests that they may be inappropriate. It is a truism that no experiment can be more correct than the conditions of the experiment allow it to be. The opinion that seasonal nasal "allergy" results from a single pollen antigen has been proved incorrect so frequently that it seems almost incredible that it should still be entertained even by a "nonallergist." All that this study would appear to indicate is that both Holt's associates are also nonallergists and possibly nonstatisticians. Their observations as to the effect of hyposensitization and also those on the validity of skin tests are influenced by the fact that they apparently do not recognize the division of immediate hypersensitivity into the atopic and anaphylactic (Arthus) types. It is generally accepted that most foods produce an Arthus type skin reaction and, in addition, that the results of skin tests for sensitization to foods are extremely undependable.

The possible cumulative effect of repeated closely spaced ingestion of an allergenic food is also overlooked. Even in 500 B.C. Hippocrates knew that a food could be eaten once in a day without producing symptoms, that if eaten twice might produce illness. The "false positive" tests might have been the result of an inadequate history; apparently provocative feeding was not attempted. The investigators' insight appears to have been so blurred by their satisfaction in conducting the currently fashionable "double blind" type of clinical research that they were at least "single blind" to the fact that their conclusions were vitiated by their neglect to consider control of the many possible variables present in these studies.

Derogatory remarks by certain observers of the value of the skin test in indicating the responsible allergen and to the effect of hyposensitization treatment in "clinical allergy" probably derive from attempting a "scientific" approach to a problem which is, as yet, properly in the province of "medical art." There can be no word better descriptive of the scientific approach than "meticulous" as it is indeed (as it should properly be) timid and fearful of errors in method and interpretation. Skepticism may be, as Santayana said, the virginity of the intellect, not to be lightly yielded to the first comer. But the clinician cannot afford an exaggerated, doctrinaire insistence on "maidenly carriage." He should put the well-being of his patient ahead of fear of damage to his reputation for infallibility. As Voorhorst said, "Allergology can only be studied as a clinical science; as the emphasis on human pathology decreases, Allergology becomes Serology, Biochemistry, Pharmacology, or at most Vetinary Allergology." The present, sometimes mindless, reverence for the "double blind" statistical method of assessing therapeutic results may result in a "statistical allergy" to this method of investigation when statistics seem to degenerate, as they do at times, into an academic method of avoiding the dictates of common sense.

It does not seem credible that the deductions drawn by Rich from the results of his years of careful animal experiment and clinical observations should be overturned in a trice by experiments based on admittedly imperfect statistical studies, even though Lowell stated that it seems unlikely that desensitization by injection treatment is related to the refractory state that can be temporarily induced in sensitized animals by the injection of large doses of antigen.

### THE DIAGNOSIS OF CLINICAL HYPERSENSITIVITY

The use of the term "diagnostic skin tests for allergy" seems to have been a cause of misunderstanding to many rhinologists as to the diagnosis of the hypersensitive clinical state. In spite of his desire to put the diagnosis of "allergy" on a "scientific" basis, the immunologist has not developed a serologic test or a "battery" of serologic or biochemical tests by which the term can be defined.[34] This leads to an obvious conclusion that the diagnosis of "allergy" still lies in the clinical field; that is it must be made on the basis of a history carefully designed to bring out possible "allergic" factors and a physical examination done by a clinician whose training and experience makes him competent to conduct it. Then the information obtained can be mixed and purged by filtration through the previous experience of the examiner. Skin tests, provocative tests, cytologic tests, radiographs, and the like are merely adjunctive to the clinical diagnosis. They may be stated to be consistent or inconsistent with the clinical (empiric) diagnosis. The clinical diagnosis should, in general, be overriding and should rarely be influenced or changed by the result of a test or even by the results of a series of tests. If test results or laboratory reports tend to be inconsistent with the clinical diagnosis they should be repeated on the assumption that technical error is involved. A fear of responsibility for action on decisions based on knowledge of the basic physiologic facts available, observation of the patient, and deductive reasoning may be the reason why some workers in the experimental laboratory are not clinicians.

It is dependence on the results of diagnostic skin tests alone and incrimination of the responsible antigen that has particularly interfered with the rhinologist gaining a reasonable understanding of the role played by hypersensitivity in this chronic condition. It is questionable how this disorder should be managed because so much of the responsible "allergy" is overlooked.

In spite of this paper's emphasis on the necessity of making the primary diagnosis of hypersensitivity by empiric methods, it should be remembered that there is not a single "characteristic" appearance of or in the nasal chambers that is pathognomonic of the hypersensitive state. There is a widespread tendency to misinterpret changes in the appearance of the nasal mucosa as "allergic" when they are, in fact, the effect of normal physiologic alternations in functional status and an unaltering physiologic response of the nasal mucosa to physical environmental changes which are common to all vertebrate nasal mucosa. Wright[42] showed that while the cavernous erectile tissue of the turbinates on one side of the nose are filling and the glandular secretions diminishing, the erectile tissues on the other side are decongesting with an increase in glandular secretions.

Burnham[43] described the arrangement of the arteries and veins in the "jacket plexuses" of the turbinate bones in which the venous return vessels from the cavernous plexuses surround the arterial supply in conduits in the bone of the turbinals so that with vasodilation the return flow from the erectile tissues is cut off and the cavernous blood sinuses in the deeper layer turbinal mucosa fill and expand. With vasoconstriction, as the diameter of the arteries diminishes, the elastic tissue in the cavernous layer squeezes out the blood like wringing out a sponge. The more superficial subepithelial layer of the mucosa is supplied with a separate arterial and venous supply, the latter not entering the jacket plexuses. Sometimes the vasomotion in the deeper and that in the more superficial tissues becomes incoordinated in its action so that superficial congestion will be present without a synchronous dilation of the erectile tissues and vice versa. When the cavernous tissues become maximally dilated, however, the arterial supply to the superficial layer tends to become occluded so that the turbinal mucosa may become paler. In chronic rhinitis the arteries of the superficial layer are dilated and a turbinal swelling takes place that is not dependent on dilation of the cavernous tissue and does not respond to shrinkage with adrenalin; possibly there may be a factor of round cell infiltration. In hypersensitivity the swelling of both deep and superficial tissue is due to edema fluid and disappears readily on application of adrenalin.

Burnham[43] demonstrated that the vessels of the anterior and posterior thirds of the middle turbinate are reflexly connected but neither the anterior or the posterior third is reflexly related to the middle third, the vessels of which are reflexly related to the vessels of the antral mucosa. The so called "mulberry" tip of the middle turbinate in hypersensitivity is usually due to edema and unless there has been fibrosis should not be removed "to improve the airway" as this usually leads to a refractory edema of the anterior tip.

In chronic hyperplastic (polypous) sinusitis, a "spectrum" disorder in which both hypersensitivity and infection play complementary roles, but to different degrees in different patients, the appearance of the mucosa will vary depending on whether the influence of hypersensitivity or infection is uppermost in provoking the stromal changes.

Goldman, Bloom, and Herschberger[44] reported that in their opinion, in children as well as in adults, many nasal problems have as their basis a vasomotor rather than an infectious disturbance, "using the term 'vasomotor' in its broadest sense." They state that not only specific allergens but also physical, emotional, and constitutional factors may be responsible for rhinitis or sinusitis with the production of secretion, nasal obstruction, and other attendant symptoms. They, therefore, conclude that the determination whether an infectious or a noninfectious process exists is of prime importance in the management of rhinologic disorders. They believe that the criteria for more specific treatment of nasal and sinal disease can be simply and easily attained by bacteriologic and cytologic study of nasal and sinal secretions.

This opinion appears to be widely held and to interfere with understanding the pathophysiologic processes and the management of the more severe degrees of chronic hyperplastic (polypous) suppurative rhinopansinusitis. The most serious objection to this opinion is that the diagnosis usually does not lie between either hypersensitivity or infection. In many, if not most cases, both conditions cooperate in producing the total disease pattern. The important determination is which is of greater importance, and how much of the total pattern is produced by hypersensitivity and how much by infection. One must also consider the possibly important role of hypersensitivity to some of the products of dissolution of Haemophilus influenzae and the difficulties of identifying this organism either on smear or by routine culture as was pointed out by Zinnemann.[45] The diagnostic methods suggested by Goldman and associates are important and must not be neglected, but it must be kept constantly in mind that they may mislead. Such differentiation as suggested is usually more feasible in what is usually called chronic allergic vasomotor rhinitis (without polyposis); in chronic hyperplastic-hypertrophic (polypous) sinusitis objective evidence of the 2 cooperating factors is usually evident although not always easily verifiable by more sophisticated laboratory methods.

In all discussions of diagnosis and differential diagnosis of rhinologic conditions in which hypersensitivity is thought to be playing a major role, it must be iterated and reiterated that atopy is not the only hypersensitivity that is to be considered and that hyposensitization is not the only avenue of therapeutic approach.

*Part III with references will appear in a subsequent issue.*

# *News Briefs . . .*

## North Dakota

DR. P. L. OWENS, Bismarck city health officer for twenty-seven years, was honored by a tea on his retirement.

* * * *

A NEW OFFICE was opened in the Holiday Mall Professional Center in Moorhead by Drs. Gordon B. and Jane Magill and Dr. Eusebio R. Mendoza. They also will maintain their present offices in the Medical Arts Building in Fargo.

* * * *

DR. CURTIS L. BAKKEN, pathologist at St. Alexius Hospital, Bismarck, successfully completed board examinations in both clinical and anatomical pathology.

* * * *

DR. ENRIQUE S. BERMUDEZ was elected chief of staff of Garrison Memorial Hospital. Dr. K. O. Leonard is the new vice-chief of staff.

* * * *

DR. RUSSELL V. ODEGARD of Minot joined the staff of the Medical Arts Clinic.

* * * *

DR. JOHN W. GOVEN of Valley City was elected president of the Sheyenne Valley District Medical Society for 1968, succeeding Dr. Neil A. Macdonald, also of Valley City. Other officers are Drs. G. Christianson, vice-president, and Warren R. Jensen, secretary.

* * * *

AN OPERATING ROOM for eye, ear, nose, and throat at St. Joseph's Hospital, Minot, will be equipped from a Dr. Samuel Shea Memorial Trust Fund, established for that purpose. Dr. Shea was an eye, ear, nose, and throat specialist who practiced in Minot from 1952 until his death last year. Officers of the fund committee are Drs. Marianne Wallis, president; Henry Kermott, vice-president; and B. Jayapathy, secretary-treasurer. Contributions may be mailed to Shirley E. Dobson of Dr. Jayapathy's office, 123 Second Avenue S.E., Minot, with checks made payable to the "Shea Memorial Fund."

* * * *

DR. RICHARD ANDERSON, a native of Washburn, will begin practice in Northwood.

* * * *

DR. RAYMOND N. LIDDELL, formerly of Oakland, Calif., was assigned as outpatient physician at the Fargo Veterans Administration Hospital.

* * * *

DR. PAUL T. VANGERUD, a native of Kindred, joined the medical staff of the Valley City Clinic.

* * * *

NOW PRACTICING in the new Linton Medical Center are Drs. W. J. Orchard, Jr., and Amado G. Chanco.

* * * *

DR. G. L. COUNTRYMAN of Grafton was named to the board of directors of the Mental Health and Retardation Center, Grand Forks.

* * * *

ST. ALEXIUS HOSPITAL of Bismarck was designated by the American College of Anesthesiologists as an examination center for qualifying physician anesthesiologists from North Dakota, South Dakota, and the upper Minnesota area. Dr. Riffat F. Morgan, director of the St. Alexius anesthesia department, was appointed examiner.

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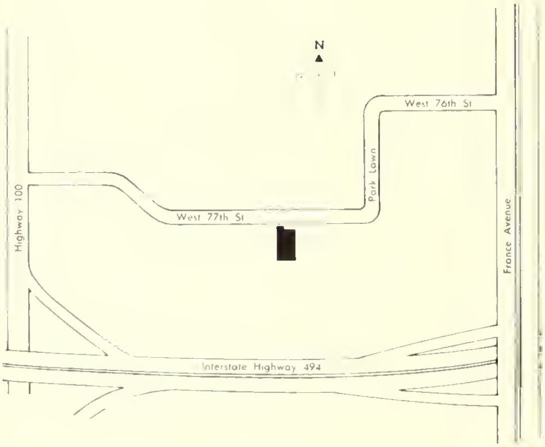

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NEWS BRIEFS

DR. DONALD A. CARLSEN was named chief of staff of the Mandan Hospital, succeeding Dr. B. A. Girard. Other staff officers are Drs. H. A. Wheeler, vice-president, and P. M. Riisager, secretary.

* * * *

DR. JAMES T. MC CAFFERY, formerly of Edmonton, Alberta, joined the medical staff of the Fargo Clinic after completing a three-year residency in internal medicine at the Mayo Foundation, Rochester, Minn.

* * * *

DR. MARK THOMAN of the Quain and Ramstad Clinic, Bismarck, was certified by the American Board of Pediatrics.

## Minnesota

A SECOND AWARD CONTEST for medical students, interns, and resident physicians in Minnesota was announced by the Minnesota Thoracic Society and the Minnesota Respiratory Health Association. An award of $200 is offered for the best paper submitted by a senior medical student or intern on some aspect of respiratory disease, preferably based upon laboratory or clinical investigation. An award of $300 is offered for the best paper submitted by a resident physician based upon clinical or laboratory investigation in the area of respiratory disease. Entries should be sent by September 1, 1968, to Dr. David E. Dines, Secretary, Minnesota Thoracic Society, Mayo Clinic, Rochester, Minn., from whom further information is available.

# *Deaths . . .*

DR. LEROY JOHN HOLMBERG, 92, Canby, Minn., died Dec. 7. A 1904 graduate of the University of Illinois Medical School, he had practiced in Canby from 1908 until his retirement in 1963.

* * * *

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* * * *

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DR. MARIO MCC. FISCHER, 68, Duluth, Minn., died Jan. 15. A past president of the National Tuberculosis Association, he served Duluth and St. Louis County as public health officer from 1932 until his retirement last year.

* * * *

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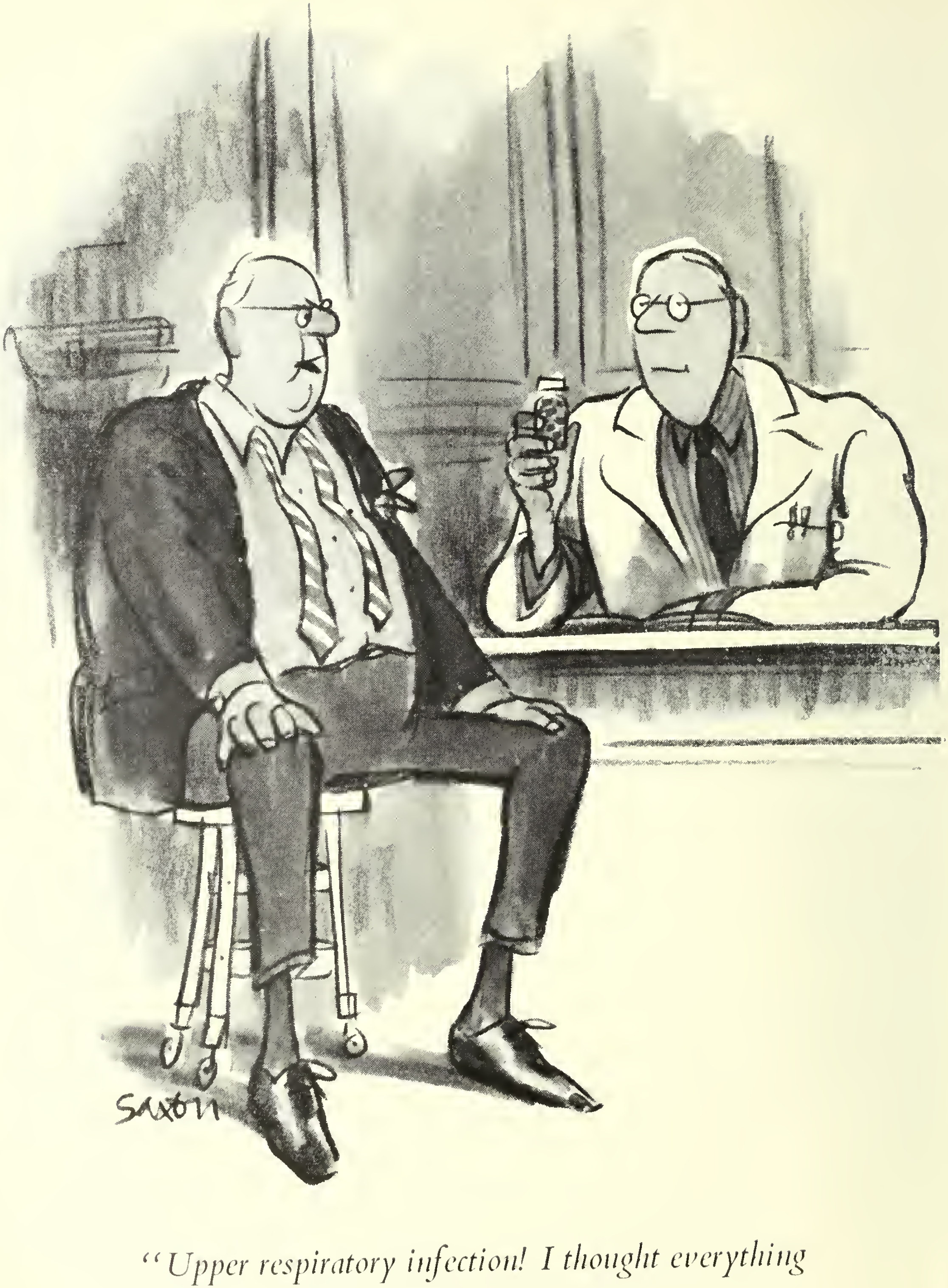

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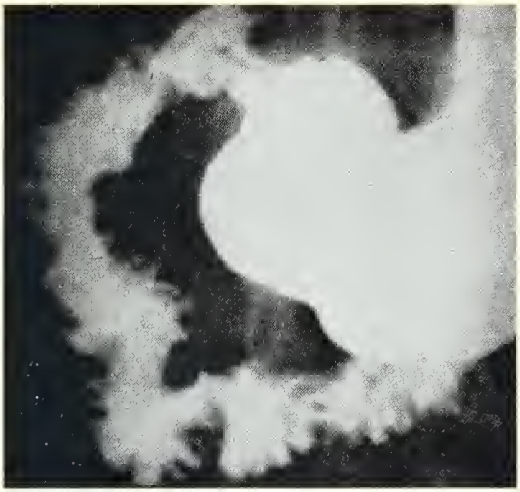

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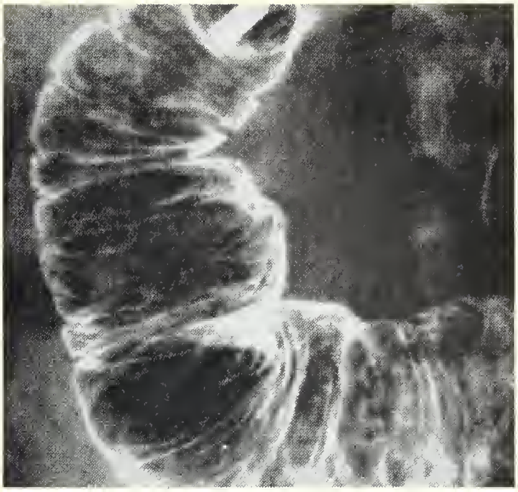

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(1) Bilbao, M. K.; Frische, L. H.; Rösch, J., and Dotter, C. T.: Hypotonic Duodenography, Scientific Exhibit, Radiological Society of North America, Chicago, Nov. 27—Dec. 2, 1966.

(2) Bilbao, M. K.; Frische, L. H.; Dotter, C. T., and Rösch, J.: Hypotonic Duodenography, Radiology 89:438-443 (Sept.) 1967.

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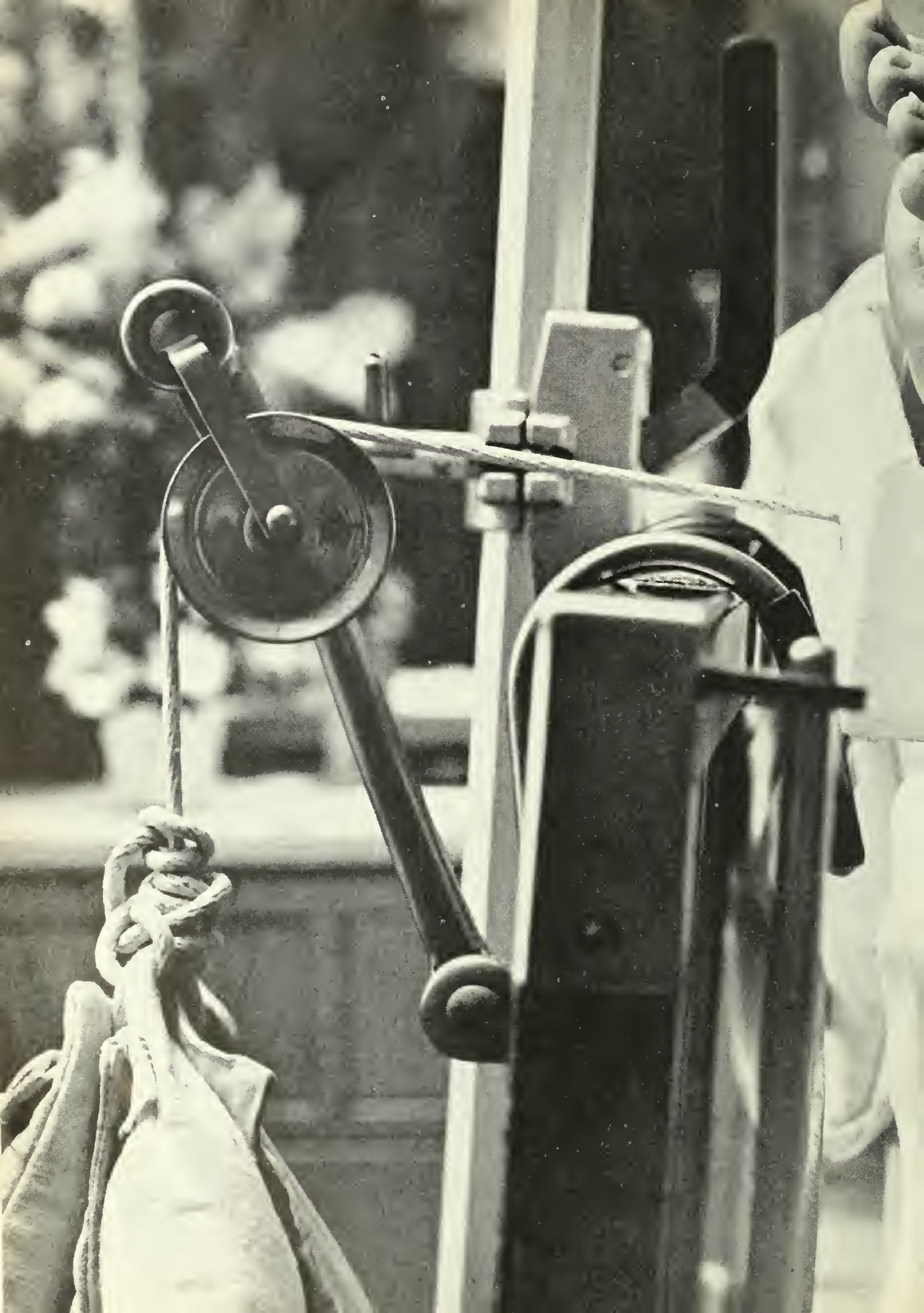

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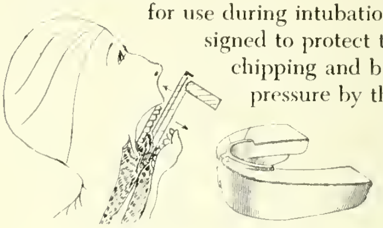

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# Indications for Psychiatric Evaluation of the Surgical Patient

FRED T. KOLOUCH, M.D.
Salt Lake City

THE INDICATIONS for psychiatric evaluation of the surgical patient are not clearly defined. At the practical level of patient care, the current practice is crisis oriented. If a surgical patient becomes a management problem at a behavioral level, the psychiatrist is consulted.[1,2] Although personality is thought to affect surgical results, a scientific relationship between psychology, homeostasis, and wound healing is not established.

In the preparation of this paper, a realization soon became apparent. Caught between the objectivity of surgery and the subjectivity of psychiatry, anyone discussing my topic is in a difficult medical position. Bastardy is a complex, distressing civil state. A surgeon with a psychiatric interest is a medical bastard. At this point of medical evolution his father, surgery, and his mother, psychiatry, remain unwed. A review of the literature on the relationship of psychiatry to surgery emphasizes they are not even engaged. They have hardly kissed. My purpose is to point out that they should at least become acquainted.

Rational man functions and adapts to his stressful environment by reality-oriented perception, thinking, feeling, and behavior. Under sufficient stress he may defend himself by flights from reality and maladaptive reactions which are dangerous and sometimes self-destructive. Man as a surgical patient perceives surgery as an iatrogenic, physical, and psychological stress. As a result, surgeons encounter a variety of complex human behaviors in all of their surgical transactions. The surgeon is plagued by the mysteries of the individual responses of his patients. Pain, disability, complications, and even death remain undesirable side effects of surgical procedures. The role of psychogenic stress in the idiosyncratic responses of patients to surgery is suspected but not understood.[3] Some influences of psychologic factors on the results of surgery are documented in the surgical literature. Currently the realities of bias and the placebo effect as potent factors related to the results of all medical and surgical treatment is established but not explained.[4] The high incidence of dangerous postoperative psychoses in patients undergoing cardiac surgery are forcing surgeons into psychiatric interests. A few studies correlate neuroses and psychoses in surgical patients with increased postoperative morbidity and mortality.[5–8] There are indications that preoperative confi-

---

FRED T. KOLOUCH *is resident in psychiatry, University of Utah Medical School, Salt Lake City.*

dence based on a good patient-surgeon relationship and a reality image of surgery can simplify postoperative surgical convalescence.[9–11]

### CASE REPORT

The danger of undiagnosed and untreated mental illness in a surgical patient will be illustrated by a case report. In this patient psychiatry proved to be a belated, but apparently lifesaving, surgical adjunct. The enormity of this patient's adaptive problem will be apparent. The surgeon was confronted with the treatment of simple rectal pathology plus an unrecognized mental illness. Rectal surgery was performed successfully, but the patient did not get well. She could not adapt to the stress of multiple surgical procedures and her neurosis complicated the results of surgery. Her progress illustrates the complexity of psychic and somatic relationships in the surgical patient. The case will be presented from three biased viewpoints: the surgeon's, the patient's, and the psychiatrist's.

Categorically, her surgeons looked at her problem as a local distressing mechanical rectal difficulty (Table 1). Her five operations, three of them rectal, and two laparotomies were conscientiously offered to aid her at the rectal level. The seriousness of her mental illness was not fully appreciated until she had a complete personality disintegration and her maladaptive behavior became a threat to her life.

Viewed from the patient's chronological existential experience, her whole lifetime of stresses and behaviors are involved in her illness. Table 2 lists her life experiences from birth to present, listed as stresses and behaviors. Her stressful early life experiences, including the death of her father, abandonment by her mother, and the acquisition of a threatening stepfather, created a childhood neurosis characterized by anxiety and chronic constipation. In spite of her constipation, daily laxatives, and enemas, she adapted well socially and received a high school education. Her stresses continued and included two unsuccessful marriages and the birth of two children with congenital deformities. Between 1953 and 1965 she developed successively: hemorrhoids, a rectal fissure, and recurring rectal prolapses. She was unable to adapt to a series of five surgical procedures aimed at the correction of her rectal pathology. She became disabled, depressed, anorexic, amenorrheic, emaciated, destitute, completely dependent, obsessed with the care of her bowel, and a hopeless, helpless, depressed, withdrawn psychiatric ward patient.

TABLE 1

CATEGORICAL HISTORY G.S. SURGERY

| *Date* | | *Diagnosis* | *Treatment* | *Result* |
|---|---|---|---|---|
| 1938 | S(1) | Appendicitis | Appendectomy | Well |
| 1953 | S(2) | Rectal fissure; hemorrhoids | Fissurectomy; hemorrhoidectomy | Healed |
| 1957 | S(3) | Rectal prolapse | Rectal excision | Healed, recurred |
| 1958 | S(4) | Rectal prolapse | Fixation rectosigmoid | Healed, recurred |
| 1961 | S(5) | Rectal prolapse | Rectal excision | Healed, recurred |
| 1965 | S(6) | Rectal prolapse | Sigmoid fixation-nylon mesh | Healed, rectal deformity |

S = Surgery

TABLE 2

HISTORY OF EXISTENCE OF G.S. BIRTH (1/4/20) TO 1967

| *Date* | | *Stress* | *Behavior* |
|---|---|---|---|
| 1923 | | Death of father | Digestive problems |
| 1926 | | Mother remarried | Constipation |
| 1928 | | Molested by stepfather | Fear—severe constipation, laxatives, enemas; socialized, responsible high school graduate |
| 1938 | | Marriage | Bowel symptoms persistent |
| | S(1) | Appendicitis | |
| 1944 | | Birth of daughter with congenital hip deformity; husband drinking, unfaithful | Maintained home and cared for child |
| 1949 | | Divorce | Employed |
| 1951 | | Second marriage—husband age 47, alcoholic | Disappointment |
| 1952 | | Birth of son with congenital hip deformity; anal fissure; hemorrhoids | Unhappy; constipated; socializing, maintained home and family |
| 1953 | | Husband hopeless alcoholic | Disabled, depressed, constipated, headaches |
| | S(2) | Rectal fissure | |
| 1957 | | Quack colon Rx; deserted by husband | Invalid, withdrawing, increasing constipation |
| | S(3) | Rectal prolapse | |
| 1958 | S(4) | Rectal prolapse | Depression, anorexia, insomnia, weight loss |
| 1960 | | Second divorce | |
| 1961 | S(5) | Rectal prolapse | Weight 82 lbs. |
| 1962 | P(1) | Destitution; dependent on parents and welfare | Unable to socialize, work, or care for self; amenorrhea |
| 1965 | S(6) | Rectal prolapse | Weight 79 lbs. |
| 1966 | P(2) | Rejection by parents and children | Depression, obsessive bowel ritual; 4 hr. anorexia; withdrawal |
| 1967 | | Home and job responsibility; organic rectal defect | Constipation, daily enemas; coping with tasks; normal appetite, weight 114 lbs.; normal menses |

S = Surgery P = Psychiatric consultation

Categorically, the psychiatrists appreciated the magnitude of her total life problem, but it was only when she became completely disabled that the patient would submit to psychiatric treatment (Table 3). In 1962 and 1965 her surgeon sought psychiatric help for her but she would not cooperate. It is significant that, in spite of this, further surgery was done. She has responded to the following comprehensive psychiatric treatment: a complete evaluation, including psychological testing, social service investigation, psychiatric hospitalization for one month, outpatient psychotherapy, drug therapy, hypnotherapy, social service assistance, and vocational rehabilitation. Currently she is able to be self-responsible

### TABLE 3

CATEGORICAL HISTORY G.S. PSYCHIATRY

| *Date* | | *Diagnosis* | *Treatment* | *Result* |
|---|---|---|---|---|
| 1923 | | Psychoneurosis? | None | |
| 1962 | | Psychophysiological reaction—constipation? | None | |
| 1962 | P(1) | "Nervous breakdown" | Psychotherapy; drug therapy | No response to therapy |
| 1965 | | Severe depression | Refused therapy | |
| 1966 | P(2) | Passive-aggressive personality—obsessive compulsive bowel ritual; constipation (etiology?) | Comprehensive psychiatric treatment hospital and OPD | Improved; responsible, healthy |

P = Psychiatric consultation

in relationship to her home, family, and job. She is not depressed, has a good appetite, regained her weight, and resumed menstruation, but remains constipated and requires daily enemas. Proctoscopy and X-ray studies reveal a seriously constricted and deformed, but not obstructed, rectum.

This patient illustrates a near disaster resulting from a surgical therapeutic emphasis in a person with a serious mental illness. The additional stress of her surgery precipitated a nearly complete personality disintegration.

In the ordinary patient-surgeon relationship, the magnitude of her repressed emotional discomfort was never apparent. Utilizing hypnosis and age regression, extreme anxiety was uncovered in relation to: [1] one of her surgical experiences when she was incompletely anesthetized but could not relate fear and pain to the surgeon, [2] a childhood experience which provokes emotion but which she refuses to discuss, and, [3] the extreme fear and hatred directed toward her mother.

## DISCUSSION

The remainder of this presentation will be devoted to a discussion of the indications for psychiatric consultation in the surgical patient. Currently, surgeons and psychiatrists have not reached an agreement on precise criteria for consultation. The purpose of psychiatric consultation should be to obviate psychiatric complications which might interfere with the results of surgery.[12]

The surgeon can identify hints of mental illness in his patient in a routine professional contact, particularly in the contents of the history and physical. Behavioral information in the presenting complaint, present illness, past history, and certain physical findings suggest the presence of past, latent, or current personality problems. In the postoperative period, any changes in the patient's perception, thinking, feeling, and behavior should alert the surgeon to a need for psychiatric consultation. Items of the history and physical and postoperative behavior which suggest a need for psychiatric consultation are listed in Tables 4-8.

### TABLE 4

INDICATIONS FOR PSYCHIATRIC EVALUATION
PRESENTING COMPLAINT

1. Delay in seeking diagnosis and treatment (date of onset—date of surgical consultation)
2. Coincidental life stresses

### TABLE 5

INDICATIONS FOR PSYCHIATRIC EVALUATION
PRESENT ILLNESS

1. Disproportion of symptoms to pathology
2. Disproportion of fear to reality of severity of illness or risks of treatment
3. Expressed premonition of death
4. Anxiety unrelated to illness
5. Depression—anorexia, constipation, insomnia
6. Symptoms of personality defect—ambivalence, denial, delusions, or hallucinations

### TABLE 6

INDICATIONS FOR PSYCHIATRIC EVALUATION
PAST HISTORY

1. Previous frequent illnesses, injuries, or operations
2. Previous psychiatric illness
3. Addiction to alcohol or drugs
4. Object losses: deaths, divorce
5. Medical litigation

### TABLE 7

INDICATIONS FOR PSYCHIATRIC EVALUATION
PHYSICAL EXAMINATION

1. Emotional lability
2. Factitial lesions
3. Sensory or motor conversion phenomena
4. Organic CNS deficits

### TABLE 8

INDICATIONS FOR PSYCHIATRIC EVALUATION
POSTOPERATIVE COURSE

1. Anxiety
2. Depression
3. Neurosis
4. Psychosis
    (a) organic (postop. delirium)
    (b) functional

## CONCLUSIONS AND SUMMARY

Surgeons generally are crisis-oriented in relationship to psychiatric consultation. A case illustrating this fact was presented. The utility of psychiatry in the salvage of this patient is self-evident. A review of items available in an ordinary surgical history and physical which are signs of mental illness were presented. They are the indications for psychiatric evaluation in the surgical patient.

Since surgical convalescence and survival can be threatened by concomitant personality disorders, a more objective approach to the behavioral aspects of the recovery of surgical patients is indicated. The surgeon, patient, and psychiatrist perceive human illness from varied viewpoints. The surgeon is primarily objectively interested in the pathology and its safe removal. The patient is subjective and emotionally concerned with the threats he sees and feels. The psychiatrist is interested in both the subjective and objective elements of the broad psychosocial, past, and current history of the patient and his adaptive capacities in relation to the stresses he encounters. Somehow the surgeon, the patient, and the psychiatrist must develop a cooperative approach to better control the broad subjective and objective elements of the surgical transaction. The role of the psychiatrist on the surgical team remains to be defined. It will be determined when the influence of personality on surgical illness, treatment, and recovery is understood.

A consequence of this psychosomatic understanding will be the marriage of surgery and psychiatry. The consummation of this marriage will produce respectable, useful offspring—surgeons with a psychiatric interest.

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Quain and Ramstad Clinic Series

# The A-B-Cs of Food Allergy

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FOOD ALLERGY has been a frustration to allergists because its manifestations have been so varied, food skin tests so unreliable, and antibodies so elusive. Even the term "food allergy" is misleading to some and perhaps should be called food intolerance, hypersensitivity, reaction, or idiosyncrasy. By food allergy this article means the appearance of specific symptoms as a result of eating a specific food, which symptoms occur cyclically or consistently in a given individual but not in the average individual, and are not due to a disorder such as gastritis, cholelithiasis, or pancreatitis.

It is the commonest allergy.[1] Because it is so varied and often so difficult to diagnose, it is more fascinating than most other aspects of allergy. For that reason this article attempts to bring to your attention the diversity of its manifestations. By the novel method of assigning 1 symptom or characteristic to each letter of the alphabet it is hoped that your attention will be attracted and your appreciation of the scope of this field be gained. No claim is made as to completeness, but the principal 26 manifestations of food intolerance or allergy are listed below, 1 for each letter of the alphabet.

AFTERTASTE is a clue in food allergy, since the particular food which is tasted upon burping should be the allergen.[2]

BORBORYGMI constitute the most constant symptom of food allergy, due to hypermotility of the intestine.

CANKER SORES are often caused by certain foods,[3] most typically citrus fruits or tomatoes.

DIARRHEA of intermittent type which is associated with mucus is a classic bowel symptom of food allergy.

EOSINOPHILIA, as demonstrated in a rectal smear, may be due to a food allergy, noted after ingestion of the offending food.[4]

FISSURES in the tongue have been shown to be due to allergy to a certain food, as a result of edema.

GASTRIC DISTRESS may be caused by a specific food in the absence of gastritis, cholecystitis, or pancreatitis. This may manifest as stomachache, gas on the stomach, burping, bloating, crampy pains, or halitosis.

HEADACHE has been shown to be caused by food allergy in some individuals.[5] Thus, for example, one 69-year-old female developed a violent occipital headache by the provocative intradermal food test for milk but was relieved by a neutralizing dose. Positive finding was later confirmed by diet manipulation.

ITCHING is a characteristic of food allergy, whether in the nose, roof of the mouth, or on the skin. More astute patients will find it occurs after meals. In 150 consecutive patients who I found gave a positive provocative intradermal food test to 1 or more foods, 60 manifested itching as one of the elicited symptoms.

JACTITATION, the tossing to and fro of a patient in acute disease, calls to mind the fidgeting associated with what has been described as allergic tension.[6]

KIBE, a fissure in the heel due to exposure to cold, calls to mind the phenomenon of thermal food allergy,[7] wherein symptoms of food allergy appear when the weather falls below a certain critical temperature.

LEUKORRHEA is seen with some food allergies and pathogenic fungi.[8]

MUCOID DISCHARGE, whether from the nose, mouth, bronchial tubes, or digestive tract, is one

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of the cardinal manifestations of allergy, including food allergy. A colorless mucoid discharge is typical of allergy, whereas a ropy purulent yellow secretion is characteristic of an infection.

"NIGHT SWEATS without any apparent cause are an extremely common allergic manifestation. One must differentiate between allergy and various infections."[7]

OBSTRUCTION of the nose, alternating in each nostril, is typical of an allergy. When the obstruction increases after meals it suggests a food allergy.

PRURITUS ANI, an itching or burning of the anal orifice following defecation, or ten minutes after eating an offending food, is a typical symptom of food allergy. In the former case the allergen is in the stool; in the latter case it is absorbed from the small bowel and carried by the circulation to the anal area.

QUENCHING the appetite for a specific food by eating that food causes alleviation of the specific symptom. This is the phenomenon of masking,[9] which occurs while the patient is still having symptoms from the previous ingestion of this identical food.

RALES, musical expiratory, characteristic of bronchial asthma, are sometimes due to food allergy.[10] This is proven by demonstrating the appearance of wheezing whenever the allergenic food is eaten.

SWELLING of the lips and lining of the mouth, swelling of the pharynx, tongue, or epiglottis, and a feeling of stiffness and even difficulty in swallowing, may be manifestations of edema due to a direct contact reaction to a certain food.[11]

TIREDNESS or fatigue is due to allergy when not associated with excessive muscular activity but oppressive in nature and not relieved by sleep. When occurring shortly after a meal, the cause will be found by determining which of the foods eaten in that meal is the offender. This postprandial fatigue is not the normal physiological lethargy but an overwhelming urge to doze.[12]

URTICARIA has been found to be caused by a food about 30% of the time[13] and, therefore, must be a prime suspect in all cases of hives. A popular misconception is that if a food is the cause it must be an unusual one which is rarely eaten (for example, shrimp, watermelon, strawberry). Actually, it will more often be found to be a common food eaten regularly and frequently, in ample quantities (for example, wheat, milk, corn).

VOMITING, with abdominal distress and nausea, which promptly follows ingestion of an allergenic food has often occurred, especially in young children.[14]

WETTING of the bed, enuresis, occasionally may have an allergenic factor. It would be controlled, of course, by specific food elimination.[15] Other manifestations of allergy would be present also.

XEROSTOMIA, or dry mouth with viscid frothy saliva, was first described in the literature in 1965.[16] Since my first case I have found 3 other patients who had mucoid saliva with more tiny bubbles than normal, due to ingestion of a specific food.

YEARNING or craving for a certain food, associated in the public's mind with the whims of pregnancy, may be found in anyone having a food allergy. The food craved typically is the allergen, as demonstrated by provocative intradermal food test, and by diet manipulation (which takes away or brings on one or more symptoms troubling the patient) or both. The craving has been likened to food addiction.[17]

ZANY behavior, such as confusion, irritability, negativism, shyness, weeping, hypersensitivity, contentiousness, feelings of unreality, slovenliness, mild depression, and aphasia may be due to food allergy.[18]

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# A Review of Current Concepts in Acute Prostatitis

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SINCE THE ADVENT of antibiotics and the decline of venereal disease, acute prostatitis and attendant prostatic abscess have become uncommon entities. However, acute lower urinary tract symptomatology, acute retention in the middle-aged male, or fever of unknown etiology deems investigation of the prostate as the site of acute infection.

Acute prostatitis is defined as an acute inflammation of the prostate, usually secondary to bacterial invasion. For the purpose of this discussion, prostatitis can be classified into 3 groups: (1) acute, (2) chronic, which is more common, and (3) granulomatous or allergic prostatitis, which is relatively rare.

Inflammation of the prostate before puberty is extremely rare. It is usually secondary to indwelling catheter drainage or congenital anomalies of the lower genitourinary tract. Only 2 cases of acute suppurative prostatitis in the neonatal period were found reported in the literature and these were secondary to hospital staphylococcal infections.[1] Acute prostatitis is more likely to involve the older male, especially when benign prostatic hypertrophy, urethritis, prostatic calculi, or epididymitis are present.

The incidence of acute prostatitis has been variously recorded, as low as 226 out of nearly 300,000 Duke University Hospital admissions noted by Alyea in Campbell's *Urology*,[2] to as high as 178 out of 919 military men between the ages of 17 to 40 in a study done at Fort Dix.[3] Predisposing factors intimated by some include alcoholism, chilling, riding in a light vehicle over rough ground, and sexual abstinence. Gartman found in his study at Fort Dix that there was an increased incidence of acute prostatitis in young men involved in long sessions of heavy necking and petting without intercourse.[4] It has been reported that there may be an increased incidence of allergic or granulomatous prostatitis in those suffering from bronchial asthma or other allergic diseases.[5]

Bacterial invasion of the prostate occurs secondary to embolic deposition from the blood stream of bacteria from distant foci of infection, such as the skin, teeth, tonsils, respiratory tract, and gastrointestinal tract. Invasion also commonly occurs directly from the posterior urethra, upper urinary tract, and secondary to instrumentation. Invasion can also occur by lymphogenous routes from the rectum and lower colon, and more rarely, extension from anal fissures or osteitis pubis. According to Creevy, before the era of antibiotics more than one-half of the acute inflammations of the prostate were secondary to gonorrhea.[6] Now, Escherichia coli, Staphylococcus aureus and albus, Streptococcus faecalis, Corynebacterium hofmani, Aerobacter aerogenes, and Pseudomonas aeruginosa are most commonly seen. Various authors have reported that on culture, one-third of the time pathogens are grown, nearly one-third of the time nonpathogens are grown, and about one-third of the time the cultures are negative.[7] Granulomatous or allergic prostatitis is thought to be secondary to an allergic reaction due to bacterial toxins or bacterial cell wall protein. Another type of granulomatous prostatitis occurs with mycotic infections such as blastomycosis.

Pathologically speaking, acute inflammation of the prostate is the result of injury, whether it be due to bacterial invasion or to bacterial toxins.

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The character of the reaction is dependent on the particular organism, its virulence, and the immune reaction of the host in general. According to Campbell's *Urology*,[8] 3 types of acute prostatitis can usually be recognized: (1) catarrhal, (2) follicular, and (3) parenchymatous. In the catarrhal stage mild, generalized edema, congestion, and polymorphic infiltration are noted in the acini and prostatic ducts. The inflammation may progress to the follicular type, in which the ducts become edematous and inflamed. Parenchymatous inflammation is recognized as diffuse purulent infiltration of the whole gland with the formation of small abscesses. These small abscesses, usually due to staphylococcal infection, can then coalesce to form larger abscesses with eventual extension to the urethra and rectum. Granulomatous prostatitis can be described microscopically as multifocal subacute inflammation with small areas of marked granulomatous reaction with no caseation. Rupture of duct walls and acini occur. Eosinophilic infiltration is a common component.

If the acute prostatitis is due to hematogenous spread, the patient may have few genitourinary complaints. The signs and symptoms are those of infection with fever, chills, malaise, and anorexia. Sexual libido is usually decreased. Occasionally there may be lower abdominal pain or lumbosacral pain of a dull, nagging nature. More commonly, there is perineal or rectal pain. There is frequently associated frequency, urgency, dysuria, cloudy urine, hematuria, and urethral discharge, especially when urethritis is present. Occasionally acute urinary retention secondary to acute swelling of the gland will be the presenting complaint.

On rectal examination the gland is enlarged, acutely tender, and boggy. If microscopic abscesses have coalesced, digital examination will reveal a fluctuant, bulging mass, or a soft depression if the abscess has drained into the urethra. Often the seminal vesicles will be palpably engorged and sensitive. Granulomatous prostatitis will most often present as an enlarged, hard, stony, nodular prostate, which is not unlike carcinoma of the prostate.[9]

Laboratory examination will reveal leukocytosis on hemogram, pus cells, occasional hematuria, and bacilluria on urinalysis, and often the offending organism on urine culture. If massage is accidentally done on rectal examination or an abscess is draining into the urethra, the smear of prostatic secretions will reveal pus cells, bacteria, and very few lecithin bodies. It has been reported that cystourethrogram will show the bladder neck to be elevated. This is due to the fact that the intravesical portion of the prostate is uncapsulated and acute swelling will tend to enlarge the gland in that direction.[10]

Differential diagnosis includes cystitis, pyelonephritis, and acute inflammatory processes in adjacent organs, such as acute appendicitis or acute diverticulitis. A Cowper's gland abscess must also be considered; however, this usually lies laterally in the anterior perineal body. Carcinoma of the prostate must also be considered if the gland has nodular elements. Complications include the occasional formation of an abscess, acute urinary retention, bacteremia and gram negative septicemia secondary to massage, epididymitis, and pyelonephritis.

Treatment includes bed rest during the period of acute inflammation, adequate diet, and hot sitz baths. Drugs such as triple sulfa, ampicillin, or chloramphenicol will usually limit the period of acute inflammation to forty-eight to seventy-two hours. Some authorities recommend occasional follow-up for several weeks with nitrofuradantoin or sulfadiazine in particularly resistant infections. Massage of the prostate is contraindicated during acute episodes. Belladonna and opium suppositories can be given for spasm. Sizeable abscesses must be drained to prevent pockets of resistant infection or rectourethral fistulas. Most authorities recommend early percutaneous needle aspiration of the prostatic abscess.[11,12] A small polyethylene catheter may be inserted through the biopsy needle for the purpose of drainage and irrigation with antiseptic or antibiotic solutions. British urologists favor drainage by transurethral resection.[13] Very occasionally resistant abscesses must be drained by perineal incision. One must bear in mind always, however, that the approach to drainage in most cases is dictated by the location of the abscess.

Management of allergic prostatitis involves relief of obstructive symptoms and providing symptomatic relief. Definitive diagnosis of any nodule must be made by percutaneous needle biopsy to rule out carcinoma of the prostate. Any bacterial invasion is treated with specific antibiotics. The condition is usually self-limiting and the prostate reverts to normal in several months.

In summary, acute prostatitis, though rare, must be suspected in any middle-aged male with acute lower urinary tract symptomatology and fever. Diagnosis is verified by physical examination. Massage is contraindicated. Treatment involves the use of antibiotics and when prostatic abscess is the main problem, early percutaneous needle drainage is indicated.

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# Causes of Confusion as to the Meaning of Allergy to the Otolaryngologist: Part III

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## HYPERSENSITIVITY TO FOODS

Many conventional clinical allergists deny or ignore the fact that ingested foods may be a major factor in producing clinical evidence of hypersensitivity. They believe that foods rarely have clinical antigenic significance in allergic hypersensitivity of the respiratory organ system.

For instance, Voorhorst[34] stated that these allergies are usually an Arthus type of immediate sensitivity with an extremely high level of sensitization so that challenge, even by a natural portal of entry, may induce an anaphylactic shock type of reaction. He does not favor the Rowe[46] type of provocative feeding tests because he has found that elimination diets produce such a nutritional deficit that their effect on the patient is more harmful than the allergy which is being combatted. He does not believe that skin testing for hypersensitivity gives dependable clinically significant results because conclusions drawn from the Arthus type of test reaction usually obtained are extremely undependable in incriminating the responsible allergen. He appears to be unaware of the provocative hypodermic and intradermic provocative tests of Lee.

Rowe[46] was one of the first allergists to stress the factor of hypersensitivity to foods. He apparently also pioneered the provocative feeding tests which were later modified by Rinkel and Randolph.[47] These tests are still considered invaluable by some allergists, but they are so time-consuming they have never gained wide popularity.

Horesh[48] has recently expressed the opinion that the recurring respiratory tract infections in children which tend to evolve into chronic bronchitis and asthma depend to a major degree on hypersensitization to foods.

Shirakawa and associates,[49] who followed a group of 500 children from infancy through puberty, found that examination revealed the appearance of a hypersensitive reaction of the mucosa up to the age of 12 to 14 years, a chronic "allergic" vasomotor rhinitis. At about puberty a change appeared with the appearance of polyps and a mucopurulent instead of a mucoid discharge with a tendency toward involvement of the lower respiratory tract.

Voorhorst[34] found a similar natural history in the development of chronic obstructive lung disease, of the chronic bronchitic type, in children visiting the Allergy Clinic in Leyden. However, he believed that a perennial atopic type of allergic hypersensitivity to house dust and human dander was responsible for the early symptoms. The continued edema of the subepithelial stroma so reduced the resistance to invasion by pathogenic bacteria as to allow the establishment of Haemophilus influenzae as the "resident flora" or comensal organism. After several years this organism tended to invade the lower respiratory tract. In the L state this organism, according to Voorhorst, releases soluble protein fractions which add a delayed (bacterial) type of hypersensitivity to the atopy originally present.

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The opinion of Voorhorst as to the importance of the haemophilus in chronic bronchitis has received support from Mulder[50] and recently from Jenne.[51]

Williams[52] believes that allergy cannot be treated successfully without a realization of the importance of food allergy and some comprehension as to its nature. He has found that by using Lee's provocative testing technique he can identify responsible food antigens with an accuracy fully comparable to the test results of conventional skin tests for the atopic type of allergic hypersensitivity. It is his opinion that even if the provocative test is unrevealing, if a given food is strongly incriminated by the history and by the previous experience of the allergist, an attempt should be made at hyposensitization, which, in spite of the skepticism as to the effects of this method of treatment, seems to produce an ameliorating effect on the symptoms of some patients with allergic hypersensitivity. It is admitted that these good results may sometimes be the result of nonspecific desensitization, mentioned by Rich, and which is advocated by Shirakawa in the treatment of his hypersensitive children.

Williams advises the use of Rinkel's "diversified rotary diet." He points out that, in addition to the nutritional deficit that is associated with the strict elimination diets usually used, if a limited elimination diet is continued without variation there will be a tendency for the patient to become hypersensitive to the foods contained in it.

He has also found that if a factor of hypersensitivity is present in chronic hyperplastic hypertrophic (polypous) suppurative rhinopansinusitis, a perennial atopic type of immediate hypersensitivity will be present and require vigorous treatment even if a "bacterial allergy" to Haemophilus is also present. He believes that if hyposensitization to the antigen in house dust and mold spores is started early enough it will constitute a prophylactic treatment to prevent the invasion of Haemophilus influenzae. This is done by controlling the effect of the ingested and inhaled allergens to produce a continuous stromal lymphatic block. They may then only produce an occasional suppurative but nonbacterial outbreak of disease as pointed out by Goldman and associates.

## NONSPECIFIC TREATMENT

The books and magazines are full of descriptions of so-called specific treatments of "allergy" so none will be attempted here. The only confusing thing about most of them is that one is led to suppose that hyposensitization is the only possible treatment and the atopic variety of immediate type hypersensitivity the only "allergy."

In this chronic condition, therapeutic success is so important to the public image of the rhinologist, and so difficult to achieve, that no effective therapeutic approach may be neglected.

Godlowski stated, "The deficit in structure of protein molecules, or dislocation of amino acids or peptide chains in space, may result from nutritional deficits, defects in co-enzyme factors, deficits in anabolic enzymes, or various forms of pathogenetic impacts (stresses tending to upset physiologic equilibrium—homeostasis) such as antigenic stimulation."

This should emphasize to the rhinologist that he should not assume the sole responsibility for these patients but ask for a consultation when a condition such as this, which cuts across several areas of specialization, is encountered.

He should also become familiar enough with the basic sciences of immunology, endocrinology, biochemistry, physiology, pharmacology, histopathology, and anatomy to know whom to call and have effective communication with him on his arrival.

Above everything else, however, the rhinologist should remember that if he operates on such a patient he is responsible for the after-care which is apt to continue indefinitely. If he does not make sure this is done, eventual recurrence of symptoms is nearly inevitable. When this occurs it is the otolaryngologic surgeon who is blamed. Therefore, even when specialists in other fields do not seem aware of the need of continuous close supervision of such patients, it is the duty (and very much to the self-interest) of the rhinologist to see that no avenue of therapeutic approach is neglected. In the past, part of the rhinologist's difficulty has been due to an unfortunate tendency for him to abandon his patient after the immediate effects of surgery have been overcome. He failed to realize that continued postoperative care is of more importance than the surgery itself, if long-term beneficial results are to be attained.

If the rhinologist is to regain a favorable public image, postoperative neglect of the patient must not occur.

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# Dietary Influences on Copper and Calcium Metabolism in the Rat

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THE RAT IS INCAPABLE of adequately digesting raw hamburger and, if its diet is limited to this, will develop profound nutritional deficiencies such as brittle bones, tremor, and stunted growth from calcium deficiency and microcytic anemia, hypochromotrichia, and loss of dental pigment from a lack of copper. Also lacking are the fat soluble vitamins, A, D, and E. If all of these are added as supplements to the hamburger diet, the animal gains weight more rapidly than those fed the standard ration.[1–3]

This diet thus provides a convenient method of producing these deficiencies and is used here to investigate their effect on some aspects of copper and calcium metabolism. Kraemer and associates[4] have evaluated vitamin A and found that it did not affect the copper concentration of the liver or heart in the rat.

### PROCEDURE

Wistar rats were used throughout, purchased at 16 days of age from the same breeder. They were maintained on Purina Lab Chow and water until the hamburger diet was begun. The normal control animals (group 12, Table 1) received lab chow and water only. A maximum of 8 rats was put into each cage, of the clear plastic variety with stainless steel tops. Commercial hamburger, containing beef and fat, was purchased in bulk and kept frozen until used. Distilled water, containing less than 0.25 $\mu$g. per cubic centimeter of copper, was used.

Blood drawing was accomplished through cardial puncture under intraperitoneal pentobarbital anesthesia (30 mg. per kilogram) into heparinized syringes. The method of Houchin[5] was used for ceruloplasmin. The result was expressed as milligrams ceruloplasmin per 100 ml. of plasma, calculated as 157 × optical density reading; 157 is the constant of proportionality we have determined for the rat (Evans, unpublished data). Plasma calcium was measured on the flame photometer.

The animals were killed by neck fracture and the carcass and organs weighed immediately. A sample or the whole organ, depending on its size, was taken for copper and calcium determinations. The wet ashing method was used throughout[6] and selected tissues were taken for histological interpretation. All data are presented as arithmetical means and extremes as these results are negative.

### PILOT STUDY

Sixty-seven rats were used (groups 1 and 2, Table 1) and begun on hamburger and distilled water at 24 days of age. Fifty-one animals received only this; 16 were supplemented with 0.078 mg. elemental copper (as sulfate) per animal per day. At 60 and 75 days of age, the females were examined for the presence of a vaginal membrane.

After four months, group 1 animals developed ruffled coats and red-rimmed eyes and huddled in the back of their cages. Dropping them from low heights brought screams and sometimes precipitated generalized convulsions, and, if held under their shoulders so the body hung free, they assumed the fetal position. When dropped they did not spread their legs to break their fall but landed on their backs.

By sixty days, one-half of the females had lost the vaginal membrane; our control rats lost this by the age of forty-seven days. The teeth became an opaque, yellow-brown on the anterior surface while the posterior surface was uniformly white. No offspring were born to these groups.

Four rats were removed to a separate cage and continued on the same diet with 1 gm. of calcium

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phosphate added to their food daily. Within a month the tremor had vanished and they fell normally. These animals were discarded.

Six rats were removed to another cage after ceruloplasmin values had been obtained and given 1 mg. of copper sulfate subcutaneously per day. Repeat ceruloplasmin studies four days later showed all increased to the same levels as group 2. The animals died in a week; a normally fed rat can tolerate two months of copper injection.

All surviving animals were killed at eight months. The carcass-to-organ weight ratio of the liver, kidney, brain, heart, and testis was determined showing no significant difference between these and the ratios of the control group. No gross or histological changes were present in these organs in 5 animals and no explanation of the infertility of these animals was apparent.

The 16 animals receiving the copper supplement (group 2) were affected more profoundly than group 1. Their stress tolerance was extremely low and 6 animals died from the shock of blood drawing. Priapism developed in the males; by seventy-five days none of the females had lost their vaginal membranes. Autopsy in the 5 animals that remained revealed the changes of profound cachexia. The only positive histological finding was mild fatty infiltration in the liver.

Group 1 had a decreased plasma ceruloplasmin (Table 1), averaging 4 mg. per 100 ml., while group 2 averaged 49.8 mg. per 100 ml. No essential difference was present in the amount of tissue copper between these groups or between these and the normal control rats.

### FOLLOW-UP STUDY

Further work was done as shown for groups 3 to 11 in Table 1. Tissue calcium was analyzed on these animals.[6] A relatively large dose of copper was used in the pilot study—78 $\mu$g. copper per day versus a "normal" intake of 40 $\mu$g. per day.[7] A smaller than normal copper intake was used in this section. The animals received not more than 18 $\mu$g. per animal per day of elemental copper (group 3, Table 1). Weekly supplements of 1 gm. of calcium gluconate, 10,000 units vitamin D, 25,000 units vitamin A, 50 international units vitamin E, and 100 mg. vitamin C were given as indicated. These animals were begun on the hamburger diet at 45 days of age. After eight months on the diet, the animals were autopsied. Plasma ceruloplasmin and calcium were determined at 4 months of age. Histological

TABLE 1

DATA ON 12 GROUPS OF RATS STUDIED PRESENTED AS MEANS AND EXTREMES

| *Group* | *Diet* | *No. began* | *No. at autopsy* | *Plasma ceruloplasmin (mg. per 100 cc.)* | *Plasma calcium (mEq. per liter)* | *Average autopsy weight, females (gm.)* | *Average autopsy weight, males (gm.)* | *Liver copper ($\mu$g. per gm.)* | *Liver calcium (mg. per 100 gm.)* | *Kidney copper ($\mu$g. per gm.)* |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Unsupplemented | 51 | 26 | 4.0<br>( 1.0-19.5) | —<br>— | 198<br>( 90-239) | 273<br>(230-317) | 3.55<br>(1.20- 6.84) | —<br>— | 4.45<br>(2.67-7.50) |
| Raw hamburger–water diet supplemented with: | | | | | | | | | | |
| 2 | Copper daily | 16 | 5 | 49.8<br>(23.5-74.3) | —<br>— | 132<br>(127-137) | 187<br>(172-201) | 3.93<br>(1.49- 4.96) | —<br>— | 5.94<br>(5.33-6.80) |
| 3 | Copper weekly | 5 | 3 | 20.1<br>(10.0-28.2) | 2.6<br>(2.3-3.1) | 158<br>(132-187) | —<br>— | 5.00<br>(3.89- 6.56) | 6.8<br>(5.6- 7.5) | 6.20<br>(3.20-8.10) |
| 4 | Copper, vitamins A, D, E | 4 | 3 | 16.0<br>( 5.5-25.0) | 3.0<br>(2.7-3.3) | 242<br>— | 305<br>(282-329) | 3.10<br>(1.20- 7.70) | 9.8<br>(6.1-13.0) | 4.00<br>(2.26-5.13) |
| 5 | Vitamin C | 8 | 6 | 10.6<br>( 7.0-17.7) | 3.1<br>(2.7-3.9) | 177<br>(166-195) | 168<br>— | 1.90<br>(0.26-10.1 ) | 3.2<br>(0.0- 5.9) | 5.12<br>(3.74-7.14) |
| 6 | Vitamin D | 6 | 3 | 14.3<br>( 8.5-25.0) | 3.5<br>(2.4-5.1) | 218<br>— | 230<br>(225-236) | 3.90<br>(1.14- 6.21) | 5.5<br>(4.4- 6.1) | 4.26<br>(3.12-5.26) |
| 7 | Copper, calcium, vitamins A, D, E | 9 | 7 | 30.2<br>(14.0-55.0) | 4.5<br>(4.1-5.0) | 248<br>(199-281) | 373<br>(352-429) | 6.10<br>(2.19- 9.60) | 11.0<br>(6.4-15.9) | 5.13<br>(4.11-7.99) |
| 8 | Copper, calcium, vitamins A, D | 5 | 5 | 8.54<br>(10.0-17.7) | 4.2<br>(3.4-4.8) | 272<br>(229-310) | 296<br>(294-301) | 3.96<br>(2.94- 5.17) | 6.4<br>(2.5- 9.3) | 5.06<br>(1.77-7.27) |
| 9 | Copper, calcium, vitamins A, E | 9 | 7 | 9.81<br>( 1.0-25.0) | 4.6<br>(3.8-5.1) | 237<br>(232-242) | 315<br>(273-349) | 5.97<br>(3.29- 9.40) | 6.2<br>(1.4-12.4) | 5.56<br>(4.28-7.60) |
| 10 | Calcium | 8 | 3 | 5.90<br>( 1.0-19.0) | 4.8<br>(3.8-5.6) | 227<br>(200-243) | —<br>— | 3.36<br>(1.49- 5.02) | 7.3<br>(1.6-14.0) | 4.85<br>(2.86-5.93) |
| 11 | Calcium, vitamins A, D, E | 13 | 12 | 15.9<br>(10.0-32.5) | 5.0<br>(3.5-6.7) | 226<br>(216-239) | 295<br>(264-329) | 3.96<br>(1.90- 8.20) | 8.5<br>(6.2-13.6) | 4.58<br>(3.61-7.08) |
| 12 | Normal control rats | 26 | 26 | 37.0<br>(18.2-52.7) | 5.6<br>(4.6-5.9) | 304<br>(239-344) | 454<br>(314-565) | 5.68<br>(1.78- 8.76) | 3.4<br>(1.3- 6.2) | 5.10<br>(4.35-8.89) |
| Spector's calcium values | | | | — | — | — | — | — | 2.8- 3.8 | — |

sections of the liver, kidney, testes, and ovaries were taken on at least 2 animals from each group and a sample, or the whole organ, from all animals surviving to autopsy was analyzed for copper and calcium.

### RESULTS

Withholding calcium supplement (groups 3 to 6) produced decreased growth, decreased plasma calcium, brittle bones, tremor, sterility, and drawing into the fetal position. This did not significantly affect the femur weight compared to the hamburger-fed animals supplemented with calcium. The body fat was reduced with even the perirenal fat being almost nonexistent. The teeth became opaque and yellow-brown as described above. Except for cachexia and almost absent semen in the seminal vesicles, no gross alterations were noted nor did microscopic analysis show any significant pathology.

The calcium-supplemented animals (groups 7 to 11) showed a very different picture. They grew normally, were vigorous, and produced a few offspring.

The copper supplement was not enough to alter the plasma ceruloplasmin to a significant degree in any of these groups nor did it change the amount of copper deposited in the tissues.

Several of these groups were individually interesting. Three animals receiving copper weekly (group 3) survived to autopsy and their general condition was essentially the same as group 2 which had received 4 times as much copper. However, their tissue sections did not show the fatty infiltration noted in group 2. Group 4 animals, which received copper and vitamins A, D, and E, were stronger, with less tremor, better growth, and some fat. They showed the signs of calcium deficiency and their tissue sections appeared normal.

Group 5 animals receiving vitamin C were the most surprising. They grew to about two-thirds of the size of the more fully supplemented animals but were active and vigorous. They alone showed alopecia, losing about one-fourth of their hair, mostly about the neck and shoulders. Their teeth became all white, fat was scanty to absent, and the testes, prostate, uterus, and ovaries remained infantile. They had signs of calcium deficiency. In spite of the infantile size, the testes appeared histologically normal. The ovaries were used for metal analysis and none were examined microscopically. Six of the original eight of these animals lived through the experiment. This is the only group where the males weighed less than the females.

Vitamin D (group 6) appreciably improved

| gm.) | *Brain calcium (mg. per 100 gm.)* | *Heart copper (µg. per gm.)* | *Heart calcium (mg. per 100 gm.)* | *Muscle copper (µg. per gm.)* | *Muscle calcium (mg. per 100 gm.)* | *Testes copper (µg. per gm.)* | *Testes calcium (mg. per 100 gm.)* | *Ovary copper (µg. per gm.)* | *Ovary calcium (mg. per 100 gm.)* | *Femur weights (gm.)* |
|---|---|---|---|---|---|---|---|---|---|---|
| 37) | —<br>——— | 4.31<br>(2.10-10.3) | —<br>——— | 1.13<br>(0.41-3.59) | —<br>——— | 0.99<br>(0.70-2.28) | —<br>——— | 9.64<br>( 7.44-10.1) | —<br>——— | —<br>——— |
| .3) | —<br>——— | 3.72<br>(2.64-4.93) | —<br>——— | 1.68<br>(0.55-3.27) | —<br>——— | —<br>——— | —<br>——— | —<br>——— | —<br>——— | —<br>——— |
| 64) | 6.3<br>(5.4- 7.7) | 6.60<br>(4.15-8.56) | 3.5<br>(2.6- 5.1) | 2.74<br>(1.66-3.71) | 14.7<br>(8.7-18.8) | —<br>——— | —<br>——— | 30.0<br>(15.9 -55.0) | 70.0<br>(69.0-70.0) | .78<br>( .74 - .82) |
| 03) | 7.2<br>(4.7- 8.9) | 3.30<br>(2.64-5.37) | 8.7<br>(5.5-13.7) | 2.00<br>(0.6 -3.8 ) | 18.9<br>(1.4-40.0) | 1.40<br>(1.24-1.68) | 6.6<br>(4.8-8.5) | —<br>——— | —<br>——— | .96<br>( .90 - 1.08) |
| 44) | 4.2<br>(2.4- 7.2) | 4.00<br>(3.30-5.10) | 8.0<br>(5.2-10.1) | 2.16<br>(0.54-4.43) | 16.6<br>(8.2-31.2) | 4.10<br>——— | 3.7<br>——— | 10.9<br>( 0.0 -22.8) | 37.7<br>( 3.7-72.0) | .78<br>( .680- .93) |
| 06) | 4.5<br>(1.6- 6.3) | 4.00<br>(3.16-4.64) | 3.0<br>(1.7- 3.8) | 2.56<br>(0.88-3.41) | 20.2<br>(7.6-43.3) | 1.40<br>(1.06-1.64) | 1.2<br>(1.1-1.3) | 9.20<br>——— | 28.4<br>——— | .84<br>( .660- 1.03) |
| 96) | 7.4<br>(3.5-12.8) | 6.10<br>(3.80-8.29) | 5.5<br>(2.4-10.2) | 2.16<br>(1.35-5.14) | 16.1<br>(3.4-62.0) | 1.0<br>(0.88-1.76) | 2.6<br>(2.5-2.7) | 9.00<br>( 8.65-38.4) | 33.0<br>( 8.4-42.2) | 1.05<br>( .82 - 1.24) |
| 64) | 7.2<br>(2.8-10.5) | 5.29<br>(4.58-6.11) | 5.1<br>(2.3- 8.1) | 1.50<br>(1.0 -1.97) | 11.1<br>(4.9-19.6) | 2.10<br>(1.65-2.56) | 4.3<br>(3.6-5.1) | 12.5<br>( 7.95-18.2) | 36.6<br>(24.2-49.0) | .982<br>( .88 - 1.11) |
| 46) | 7.9<br>(2.4-26.1) | 4.24<br>(2.82-5.74) | 3.6<br>(2.2- 5.9) | 1.85<br>(1.52-2.82) | 8.5<br>(5.6-10.7) | 1.90<br>(0.91-1.80) | 3.3<br>(2.4-4.5) | 12.5<br>( 7.85-14.2) | 33.8<br>(17.4-51.0) | 1.01<br>( .88 - 1.11) |
| 17) | 5.4<br>(4.6- 6.6) | 4.97<br>(4.74-6.45) | 6.8<br>(6.1- 7.6) | 1.49<br>(0.90-1.96) | 4.3<br>(3.4- 5.1) | —<br>——— | —<br>——— | 14.0<br>( 4.96-25.0) | 25.7<br>(12.3-36.0) | .85<br>(74.3 -94.1 ) |
| 86) | 7.8<br>(2.2-27.7) | 4.10<br>(2.88-5.50) | 4.4<br>(1.8- 7.1) | 2.90<br>(1.18-5.35) | 10.3<br>(4.0-27.0) | 2.05<br>(1.30-2.40) | 3.3<br>(1.5-4.7) | 10.6<br>( 6.21-16.8) | 25.3<br>(17.4-30.0) | .94<br>( .75 - 1.15) |
| 10) | 10.1<br>(2.0-28.9) | 5.29<br>(4.25-9.10) | 5.9<br>(2.4- 9.8) | 2.43<br>(1.27-4.69) | 6.3<br>(2.1- 8.1) | 2.17<br>(0.69-4.10) | 2.7<br>(1.2-5.5) | 14.0<br>( 9.30-23.5) | 8.5<br>( 2.2-14.3) | 1.73<br>( 1.68 - 1.77) |
| — | 4.7- 5.5 | ——— | 3.0-20.0 | ——— | 6.3 | ——— | ——— | ——— | ——— | ——— |

the weight gain and general health but did not affect the signs of calcium deficiency. The genitalia were smaller than normal but not as small as the vitamin C-supplemented group.

## DISCUSSION

The low ceruloplasmin level in the groups not supplemented with copper is good evidence of the low-copper state of these animals since it has been shown in the rat that 99% of the plasma copper is in ceruloplasmin[8] and a low-plasma copper is accepted as the sine qua non of copper deprivation.[9] It is also apparent that this diet induces deficiencies not only of the fat-soluble vitamins but also of at least one water-soluble vitamin, vitamin C. This is obvious when one compares the autopsy weights of the hamburger-fed rats to the controls; there is slight overlap of extremes but the differences are apparent. Probably there are even more deficiencies than these, for our most adequately supplemented animals had only 2 litters in the period of the experiment while normally fed rats can be depended upon to have litters regularly. These litters were both small (Table 2) with only 2 normal appearing pups in each. Both litters were deficient in liver copper but apparently there was enough for the basic requirements as the other three organs had normal values. The minimum liver copper concentration compatible with life is not known, but it would seem that the normal fetus contains more than the minimum. Copper-deprived rats are known to produce offspring with decreased liver copper while increasing the copper intake of the mother will not increase the copper in the baby.[10,11]

The factors producing this relative sterility are yet to be determined. We did not use vitamin K which may have been present in the supplements of Moore and associates[3] nor did we give vitamin C with the other supplements. These may have made a difference. Even with all supplements, the rats did not have femurs with the resistance of normal animals as they could be broken more easily than those of a normally fed adult rat. There was a difference in the mean femur weights between the normal control rats (group 12) and the hamburger-fed animals and there is no overlap in extremes. This growth defect is not strictly a lack of copper, as copper supplement did not increase femur size. The dog is very sensitive to copper levels, becoming osteoporotic with deformed bones on a low-copper diet.[12,13] In spite of the profound gross changes, the histologic picture of the examined organs in this work was unaltered. Even the infantile testes of the vitamin C–supplemented animals in group 5 showed spermatogenesis.

The male rat normally develops white or very pale lower incisors at maturity while an occasional female will also have white teeth. When the teeth did turn white in this experiment, it began on the inside and gradually extended to the anterior surface. Our most obvious color change was from a translucent tan to an opaque, muddy, yellow-brown, accompanying wasting in the animal.

Lower incisors from 8 control animals varying from brown to white were broken off at the gum line, digested, and analyzed for copper. One tooth had a total copper of 0.1 μg. and the other 7 were too low to measure. This amount of copper in a 0.07-gm. rat tooth is equivalent to 1.5 μg. per gram. A human tooth by comparison contains 15 to 30 μg. per gram of copper.[14] This low tooth copper in the rat would be expected as copper is not part of the rat tooth pigment; an iron compound is the coloring material.[1] Calcium appeared to facilitate the deposition of this iron pigment as shown by the normally pigmented teeth in the 2 groups that received calcium alone (group 10) and calcium plus vitamins (group 11). Perhaps the copper level was not low enough in these rats to lead to dental depigmentation.[15]

These data indicate that the plasma ceruloplasmin level is dependent on the copper intake but the organ copper that we measured is unchanged by the factors that were altered in this

TABLE 2

COMPARISON OF COPPER CONCENTRATIONS IN ORGANS OF 4 OFFSPRING IN GROUPS 10 AND 4 WITH OFFSPRING FROM LAB CHOW–FED ANIMALS

| *Group* | *No. of animals* | *Liver (μg. per gm.)* | *Kidney (μg. per gm.)* | *Brain (μg. per gm.)* | *Heart (μg. per gm.)* |
|---|---|---|---|---|---|
| 10* | 2 | 11.5 | 5.30 | 3.47 | 6.90 |
| 4* | 2 | 6.06 | 6.48 | 2.62 | 12.30 |
| 12 | 70 | 20.3 | 6.09 | 3.66 | 11.30 |
|  |  | (13.1 - 30.4) | (2.71 - 9.51) | (1.57 - 5.95) | (2.86 - 30.0) |

*Note profound decrease in liver copper

experiment. The constant liver copper has been noted in copper deprivation experiments by others who find the level to reach about 60% of normal in the rat and remain there. They felt this represented a more stable portion of the liver copper.[7]

The unaltered tissue calcium in these animals suggests a critical level for such functions as nerve impulse conduction[16] and the maintenance of ion communication between cells.[17] Tissue calcium will increase in the face of a much larger calcium supplement[6] than given in this experiment. The unchanged tissue copper concentration may have the same connotation, since copper is known to be necessary for the action of several enzymes and hormones.[18]

The ovary is a very small organ (average weight of both rat ovaries is 70 mg.) and the chance of error in its copper analysis is great. However, many more ovaries than those listed here have been analyzed and they are all in the same high range. The testes are low in both metals. The ovarian copper may be necessary for ovulation as this can be induced in the rabbit by intravenous administration of cupric gluconate[19] and normal fertilization will follow this induction.[20]

Fat deposition in our animals was profoundly affected by the calcium intake. Moore and associates[1] noted this calcium effect and further found a copper-deficient state tended to decrease the liver-body weight ratio but to increase the liver fat content.[3] The copper-supplemented group 2 animals showed definite fatty infiltration in the liver.

Why did even small amounts of copper supplement to groups 2 and 3 rats result in such catastrophic debility? These rats were obviously deficient in copper but its addition worsened their state. No change in their organ copper was apparent nor did group 3 animals have a variation in tissue calcium. We may postulate that the copper interfered with some enzyme system as it is known that concentrations of copper as low as $10^{-6}$ moles will inhibit enzymes in a number of ways.[18] These animals, deficient in vitamins which participate in enzyme systems, would be particularly susceptible to such action.

## SUMMARY

The efficacy of the raw hamburger and water diet has been tested for its ability to produce nutritional deficiency states in rats. Multiple deficiencies are observed by the lowered plasma ceruloplasmin and calcium levels, decrease in growth, and tremor and loss of protective reflexes. The ceruloplasmin deficiency is quickly corrected by adding copper sulfate to the food or injecting it subcutaneously but the animals tolerate this addition poorly and their general state is far worse than animals not given copper supplement.

The calcium deficiency induced by this diet manifests as failure to gain, frail bones, and tremor and loss of protective reflexes; all are repaired by calcium feeding.

The tissue concentration of both copper and calcium are not altered by this deficient diet, suggesting a basic level of these elements below which the animals cannot survive.

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We thank Krause Drug for their help with the chemicals used and Mercy Hospital and Good Samaritan Hospital, Williston, N.D., for the use of their laboratory facilities.

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# Arnold Sibert Anderson

J. ARTHUR MYERS, M.D.
Minneapolis

ASLAK ANDERSON was born in Norway in 1858. When he was very young his father died, and in 1869 his mother brought him and his 2 brothers to the United States where they took homestead claims in the vicinity of Milan, Minn. At the age of about 20, he and his brother started a general store. In 1883 he married Annie Thompson of Rushford, Minn; they had 6 children, one of whom was born Aug. 20, 1898, and named Arnold Sibert. After completing grade school, Arnold spent two years at Milan high school and finished at St. Olaf Academy. He then attended two years of college at St. Olaf and went on to the University of Minnesota. In 1918 he became a member of the Student Army Training Corps in Minnesota. He received the degree of Bachelor of Medicine in 1923 and accepted an internship at the Northern Pacific Railroad Hospital in St. Paul.

Like many other students and graduates of medicine at that time, Dr. Anderson developed tuberculosis which became manifest in the apex of each lung in December 1923. He was admitted to the Minnesota State Sanatorium in February 1924 where the diagnosis was confirmed bacteriologically. He was discharged in July 1924, but readmitted in October of the same year.

In 1924 he conducted Dr. Burns' general practice at Milan for three weeks. He then practiced for brief periods in Cavalier, N.D., and Skagway, Alaska, before returning to his internship. At that time an internship was required for the M.D. degree which he was awarded in 1925. Dr. Anderson then entered the tuberculosis field and became resident physician for the Minnesota State Sanatorium, "Ah-Gwah-Ching," from 1925 to 1926. In 1926 he was appointed superintendent and medical director of the Buena Vista Sanatorium at Wabasha, Minn. His work was of such high quality that in 1928 he was appointed executive secretary of the tuberculosis division of the Minnesota State Board of Control. In this capacity he directed the activities of all county sanatoriums. He was greatly admired and highly respected by those with whom he worked. He was instructor in diseases of the chest in the University of Minnesota School of Medicine from 1926 to 1931.

In 1931 he decided to extend his professional activities to include all of internal medicine preparatory to entering private practice. Therefore, he spent considerable time attending clinics and lectures in the school of medicine—with emphasis on cardiovascular diseases and conditions.

In 1931 he married Frances Brown of Minneapolis. They made extensive inquiry as to which area in the United States offered the most equable year-round climate. His final choice was St. Petersburg, Fla., where in 1932 he established a private practice in internal medicine with emphasis on diseases of the chest and heart. He continued this practice for approximately thirty-five years.

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J. ARTHUR MYERS *is with the School of Public Health and the Department of Medicine, University of Minnesota Medical and Graduate Schools, Minneapolis.*

Soon after settling he was elected to membership in Pinellas County and the Florida State medical societies. Because of his special interest and experience in all aspects of tuberculosis work, he promptly became a member of the local and the Florida tuberculosis associations. In 1936 Governor Dave Sholtz appointed him the medical member of the Florida State Tuberculosis Board which had been established in 1934. W. T. Edwards and Louie Bandel were the other members. Dr. Anderson served with distinction in this capacity for sixteen years. Because of his previous sanatorium experience in Minnesota, Dr. Anderson was influential with all concerned.

During those years, through Dr. Anderson's effort and the cooperation of the other board members, 4 sanatoriums were built. The first was the Central Florida Tuberculosis Hospital at Orlando, which was dedicated on Jan. 3, 1938. Subsequently, 3 others were constructed in the state. Soon after these institutions were in operation, tuberculosis in Florida began to decrease until it reached its present day low level.

Along with a large medical practice, Dr. Anderson found time to contribute to various other activities. He was a staunch supporter of his county medical society and served as vice-president in 1941. He was also consultant in chest diseases with the Veterans Administration Hospital, as well as an active member of the medical staffs of the Mound Park and St. Anthony hospitals. As a member of the Chamber of Commerce of St. Petersburg, he served as governor from 1948 to 1951. He held membership in the Sunset Country Club and the St. Petersburg Yacht Club.

For many years Dr. Anderson was a Fellow of the American College of Chest Physicians. From 1951 to 1954 he was state governor of that organization and became a regent in 1954. In all of the years of the college, and among its extensive membership, there was never a more loyal and devoted Fellow. During an interim session of the college in Miami Beach, November 1954, Dr. Anderson informally expressed his evaluation of all such medical meetings with reference to world peace. He was induced to prepare an editorial which was published in the June 1955 issue of *Diseases of the Chest* under the title "World Peace." This is a remarkable document, ending "Medicine and Music both speak their universal language of peace and good will. If they ruled the world there could be no war." This editorial resulted in such approbation that a series of editorials on the general theme of "Physicians and World Peace" was suggested and accomplished. The authors were residents of England, East Pakistan, Mexico, South Africa, the Philippines, Sweden, India, Peru, and the United States.

When Dr. M. A. Burns established his medical practice in Milan, Minn., in 1898, the first baby he delivered was Arnold Anderson. In 1947 Dr. Anderson was asked to be the town's main speaker at a celebration for Dr. Burns. Dr. Anderson referred to the doctor's great goodness and how as a child he had admired him so much when he came into their home to relieve the sick and comfort the saddened. He added how this kindness was repeated from home to home and that as he grew older the doctor would frequently take him on house calls far into the country and discuss the many kinds of illnesses, how they were treated, and how they could be prevented. It was through these experiences and observations of Dr. Burns that Arnie decided that "he must become a doctor."

In July 1965, when the 85th anniversary of Milan and Dr. Burns' recognition day (90 years old) were celebrated, Dr. Anderson was again called back as main speaker.

After Dr. Anderson moved to Florida, he returned to Minnesota for a few weeks each summer. On each of these occasions he had conferences with the heads of departments in the medical school for the most up-to-date information available in his field of practice. On occasion, he registered for a short course in the Continuation Medical Education Center. For a number of years he devoted a part of his summers as acting medical director and superintendent of the Lake Julia Sanatorium at Puposkey during the summer vacation of Dr. Mary Ghostley.

In the summer of 1966, Dr. Anderson took the university's course in hypnosis; so much was being said and written about this subject that he was desirous of obtaining information on what it was based and practiced.

He had deep interest in the chest disease work physicians were doing in other parts of the world. Therefore, he visited and made observations in other countries including Mexico, Germany, British Isles, and those of Scandinavia. In London in 1931, he left a guided tour to spend three days visiting Oxford University and the Museum of the Royal College of Surgeons.

My experiences and friendship with Arnold Anderson covered a period of fifty years. He was the very personification of trustworthiness in every respect—being unassuming, kind, sympathetic, understanding, loyal, and dependable. While he was still in Minnesota, we were together a great deal on the campus and attended nearly all local, state, and national medical meetings together. Thereafter, we attended one or more national or international medical organizations together annually.

He was a voracious reader and had a retentive mind. It is doubtful that anyone ever had at his tongue's tip a larger number of quotations, both prose and poetry. For the most part these were derived from the world's finest literature. A subject under discussion was rare indeed for which Dr. Anderson did not have one or more worthwhile quotations.

On Dec. 9, 1963, Dr. Anderson was found to have a malignant melanoma on the upper back just to the right of the midline. This was removed the next day. Ten days later a wide deep block excision of the skin and subcutaneous tissue to, and including the fascial layer, was done. In April 1965, a mass appeared over the medial aspect of the right scapular region. On April 19 this metastatic malignant melanoma was removed. On August 2, a 2½-cm. tumor mass was present in the left axilla and a node was palpable in the right axilla. On August 18 a block dissection of the skin and subcutaneous tissue from the primary and secondary sites on his back and bilateral axillary node dissection were done in the University of Minnesota Hospitals. Some nests of melanoma remnant in the subcutaneous tissues just beneath the midline scar on the back and a tumor in 1 lymph node from the left axillary dissection were found. Some difficulty occurred with skin grafting which required longer than usual hospitalization. The report by the hospital surgical staff to Dr. Anderson's physician in St. Petersburg ended: "We all enjoyed having Dr. Anderson with us. His was a long and tedious hospitalization and his patience and stamina were applauded by all those who came in contact with him." Soon Dr. Andeson resumed private practice.

On June 15, 1966, Dr. Anderson apparently was in perfect health as careful examination revealed no abnormality. However, about June 20, he developed symptoms which he interpreted as those of a mild attack of influenza. These grew worse throughout the week we attended together the 32nd Annual Meeting of the American College of Chest Physicians, beginning June 23, 1966, in Chicago. Immediately upon returning to Florida, he was hospitalized and died on Aug. 30, 1966.

In his county medical society publication (Picomeso) under "In Memorium" is the following: "All who knew him, even casually, will remember Arnie as a man they were proud to meet. His smile, his good humor, his firmness for his moral and professional convictions and his clinical acumen were inspiring." "Many honors came to Dr. Anderson throughout his lifetime . . . as the last his name will be inscribed in the Angel's book as 'one who loved his fellow man.' "

# *News Briefs . . .*

## North Dakota

DR. WILLIAM C. NELSON of Grand Forks has been elected president of the Third District Medical Society for 1968. Other officers are Drs. John J. McLeod, Grand Fork, president-elect; Nicholas Kaluzniak, Langdon, vice-president; and Thomas L. Schafer, Grand Forks, secretary-treasurer.

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DR. PERRY O. TRIGGS of Fargo has been named a North Dakota delegate to the regional meeting of the American Society of Internal Medicine at Phoenix, Ariz.

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DR. RUSSELL O. SAXVIK was reelected president of the Bismarck Hospital medical staff. Drs. Marlin Johnson and Robert Tudor were also reelected as vice-president and secretary, respectively.

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DR. JOHN J. SMOLENSKI, formerly of Detroit, Mich., has joined the Minot Medical Arts Clinic staff in the practice of obstetrics and gynecology.

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DR. DIONISIO T. LIBI has joined the staff of the Minot Eye, Ear, Nose and Throat Clinic. A graduate of the University of St. Thomas Medical School in Manila, Dr. Libi is an otolaryngologist.

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DR. DONALD A. CARLSEN, an obstetrician and gynecologist, has been named chief of staff at Mandan Hospital, succeeding Dr. B. A. Girard.

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DR. GEORGIE BURT has joined the staff of the Fargo Clinic as a specialist in adolescents' medicine.

* * * *

DR. CLAVIN C. FERCHO of Fargo has been elected president of the North Dakota First District Medical Society, succeeding Dr. W. O. Webster. Other officers are Drs. Marshall Landa, vice-president; Maynard B. Gustafson, secretary; and George R. Thompson, treasurer.

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DR. KEITH G. VANDERGON of Grand Forks has been elected chief of staff and president of the executive board of St. Michael's Hospital, succeeding Dr. William C. Nelson. Other board members are Drs. James A. Leigh, vice-president; John A. Lambie, secretary; and Carl E. Lorentson, Robert C. Painter, and George A. Wilson.

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DR. VINCENTE S. VERZOSA has joined the Bottineau Clinic staff.

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DR. G. H. HEIDORN of Minot has been appointed North Dakota governor of the American College of Cardiology.

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DR. W. I. MENNIS, service unit director of the Public Health Service Indian Hospital in Belcourt, reports the relocation of their new hospital in the community.

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DR. JOSEPH ADDUCCI, an obstetrician and gynecologist with the Craven-Hagen Clinic in Williston, received certification from the American Board of Obstetrics and Gynecology.

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DR. BRIAN E. BRIGGS of Minot was a participant in the annual General Practice Review at the University of Colorado Medical Center, Denver.

DR. A. MALCOM CAMERON of Minot headed the medical team that performed the state's first open heart surgery at Trinity Hospital Heart Surgery Center.

* * * *

DR. WARREN L. MACAULAY, head of dermatology at the Fargo Clinic, was elected president of St. Luke's Hospital medical staff, succeeding Dr. G. Howard Hall. Other officers are Drs. Mack V. Traynor, vice-president, and T. M. Hamilton, secretary.

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DR. WILLIAM F. MC CULLOUGH has joined Dr. Johan Eriksen in the practice of radiology at St. Alexius Hospital, Bismarck.

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DR. V. J. CARLSON of Fargo was elected chief of staff at St. Ansgar Hospital, succeeding Dr. Richard H. Seifert. Other officers are Drs. M. J. Geib, vice-president; H. J. Weyers, secretary-treasurer; and G. W. Brown and Eusebio Mendoza, directors.

## Minnesota

A CONTINUATION COURSE in clinical electroencephalography will be held September 9-11 in San Francisco under the direction of Dr. Donald W. Klass of the Mayo Clinic, Rochester. Sponsored by the American EEG Society, aided by a grant from the National Center for Chronic Disease Control, U.S. Public Health Service, the course is designed as a basic review of the applications of the EEG to clinical medical practice. The faculty will include Dr. Reginald G. Bickford of Rochester. Inquiries should be directed to Dr. Klass, EEG Course Director, Mayo Clinic, Rochester, Minn. 55901.

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NEW ADDITIONS to the staff of the Mayo Clinic, Rochester, are Drs. Joseph Combs, Jr., James Donadio, Jr., and Jack Hall, internal medicine; Carl Anderson, nephrology; Gordon Danielson, Jr., general surgery; John Magness, physical medicine and rehabilitation; Haruo Akazaki, experimental and anatomic pathology; and Burton Onofrio, neurologic surgery. Dr. Roy Ritts, Jr., former director of medical research for the American Medical Association (AMA) as well as the AMA Education and Research Foundation Institute for Biomedical Research, became head of the microbiology section and professor of microbiology in the Mayo Graduate School of Medicine. Newly appointed instructors in the Graduate School are Drs. Joseph Combs, Jr., David Sanderson, and Thomas Schattenberg, medicine; Frank Leary, urology; and Walter Lysak, neurology.

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DR. WESLEY W. SPINK, University of Minnesota professor of medicine, is one of 12 physicians who will receive Masterships, the highest membership honor of the American College of Physicians, at the College's annual session in Boston, April 4.

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DR. OWEN WANGENSTEEN, recently retired after thirty years as chairman of the University of Minnesota's surgery department, will receive the 1968 Distinguished Service Award of the American Medical Association at its convention in San Francisco in June.

(Continued on page 10A)

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Among problem patients, greater improvement has been reported[1] for 35% of patients with stubborn allergic conditions following Colrex Decongestant therapy than with previous medications. Equal effectiveness with previous drugs was noted in 34% and less efficacy among 20%.

**Adults and children over 12,** one tablet 3-4 times daily; **children 6–12,** one-half tablet 3-4 times daily. **NOT RECOMMENDED** for children under 6.

**Precautions.** Antihistamines may produce drowsiness. Patients should be cautioned about performing tasks which require alertness, such as driving, operating dangerous machinery. Give tripelennamine with caution to patients with known history of petit mal seizures. Give hypnotics and sedatives with caution to patients receiving tripelennamine. *Use caution in hypertension, hyperthyroidism, diabetes mellitus, or heart disease.*

**Adverse Reactions.** Antihistamines frequently produce some form of adverse response, few of which are serious. Most common are drowsiness, dryness of mouth, dizziness, headache, excitation, gastric discomfort. Latter can be alleviated by taking tablets with food. If symptoms persist, adjust dosage or discontinue medication.

**Warning.** On rare occasions, severe acute hypersensitivity, leukopenia and agranulocytosis have been reported in conjunction with antihistamine therapy. Repeated blood counts are recommended for patients on long term therapy.

**Caution:** Federal law prohibits dispensing without a prescription.

1. Stoesser, A., and Nelson, L.: Clinical evaluation report, July, 1967

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Because it is solely an expectorant, other medications can be prescribed with COLREX Expectorant without hazard of overdose or interference. Use with Rowell Iso-Tabs 60 for asthma and with Colrex Compound for cough due to common cold.

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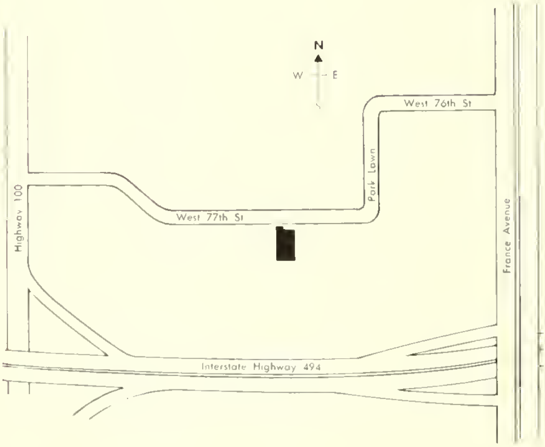

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## NEWS BRIEFS

(Continued from page 7A)

RELIEF of chairmanship duties was requested by 2 University of Minnesota Medical School department heads. Dr. Donald W. Hastings, chairman of the department of psychiatry and neurology for twenty-two years, and Dr. Maurice B. Visscher, chairman of the physiology department for thirty years, asked to step down to do more teaching and research at the university.

* * * *

DR. NORMAN HOOVER, Minnesota orthopedic surgeon now in Saigon on an American Medical Association assignment as field director of a joint U.S.-South Vietnamese program aimed at upgrading medical education there, resigned from the staff of the Mayo Clinic, Rochester, last June to take his present post, the clinic announced, saying the resignation had been "accepted with regret." Dr. Hoover, who has done volunteer work on the S.S. Hope, had made several previous trips to South Vietnam and served as a captain in the Army Medical Corps during the Korean War.

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DR. C. D. CREEVY, director of the University of Minnesota's division of urology from 1936, retired and entered private part-time practice in Minneapolis with 3 former associates, Drs. E. A. Webb, B. A. Smith, and William Price.

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DR. EDGAR GOLDSTON of the Mayo Clinic, Rochester, was named to the executive committee of the Minnesota Academy of Occupational Medicine and Surgery.

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DR. LEE N. PODOLL, formerly of Rochester, joined the staff of the Valley Medical Center at Spring Valley.

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DR. EARL DAGG of Thief River Falls was named president of the Red River Valley Medical Association. Other new officers are Drs. Owen Holm, Crookston, vice-president, and H. D. Clapp, Crookston, secretary-treasurer. Dr. George Martin, Thief River Falls, was named delegate and Dr. John A. Jenson, Crookston, and Dr. Dagg, alternate delegates to the state medical convention.

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INFORMATION on the Minnesota Symposium on Prevention in Cardiology, to be held May 2-3 at the Mayo Clinic, Rochester, is available from Dr. Henry Blackburn, Stadium Gate 27, University of Minnesota, Minneapolis 55455.

* * * *

NEW OFFICERS of the medical staff of Immanuel Hospital, Mankato, are Drs. D. C. Meredith, president; C. J. Strobel, vice-president; D. W. Grande, secretary; M. W. Dobson, head of surgery; and D. H. Freeman, head of medicine. Dr. Harry J. Smith of Lake Crystal was named head of general practice. The officers and 3 elected members, Drs. A. M. Scheidel, E. E. Heller, and D. H. Wahl, make up the executive committee for 1968.

## *Deaths . . .*

DR. HERBERT H. BUSHER, 75, St. Paul, Minn., died Jan. 26. A surgeon, he was a former chief of staff at St. John's Hospital and served on the faculties of the University of Minnesota and Concordia College. Dr. Busher is credited with inventing the automatic injector for diabetic treatment.

* * * *

DR. THOMAS O. YOUNG, 74, Duluth, Minn., died Feb. 2. A long-time city physician, he was the founder and first president of the Duluth Surgical Society. Dr. Young served on the staffs of St. Mary's, St. Luke's, and Miller hospitals and was elected to the honorary medical staff of St. Mary's the day before his death.

* * * *

DR. LESTOR PARSON, 76, Elbow Lake, Minn., died Jan. 23. He had practiced in Elbow Lake since 1923.

* * * *

DR. G. G. THORGRIMSEN, 73, formerly of Grand Forks, N.D., died in Vancouver, Wash., Feb. 3. He had practiced in Grand Forks for forty-two years and was a former assistant professor of embryology and histology at the University of North Dakota. Dr. Thorgrimsen also served as the first state medical consultant of federal-state vocational rehabilitation and was Grand Forks county coroner from 1961 to 1967.

* * * *

DR. MORSE J. SHAPIRO, 74, formerly of Minneapolis, Minn., died in Los Angeles, Calif., Feb. 11. Dr. Shapiro was a former clinical director of pediatrics and medicine at the University of Minnesota and helped establish the Variety Club Heart Hospital. He was a consultant cardiologist to the Minneapolis Board of Education. In 1955 he received the university's first special commendation for distinguished achievement as a pioneer in scientific knowledge in the heart field.

* * * *

DR. MORRIS H. SHERMAN, 44, Minneapolis, Minn., died Feb. 10. He was a staff member of Mt. Sinai Hospital.

* * * *

DR. ARTHUR IDE, 92, White Bear Lake, Minn., died Feb. 11. He joined the staff of Northern Pacific Hospital, Brainerd, in 1905 and was chief surgeon at his retirement in 1943.

* * * *

DR. ELEANOR CRIM, 72, formerly of Fargo, N.D., died in Seattle, Wash., Jan. 30. She was Fargo city health officer and coroner in 1954 and twice served as a medical missionary in India.

* * * *

DR. JOHN GROTTING, 52, Minneapolis, Minn., died Feb. 8. Dr. Grotting had served as chief of staff of Northwestern Hospital and at the time of his death was on the staffs of Northwestern, Abbott, Fairview, Fairview Southdale, Deaconess, Hennepin County General, and the University of Minnesota hospitals.

**General Practitioner Wanted**

The Memorial Hospital of Maddock and Community is in need of a General Practitioner. Our present doctor is leaving in April for his native country.

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***Contact, Harry Hetler, Chairman***
Maddock Memorial Hospital
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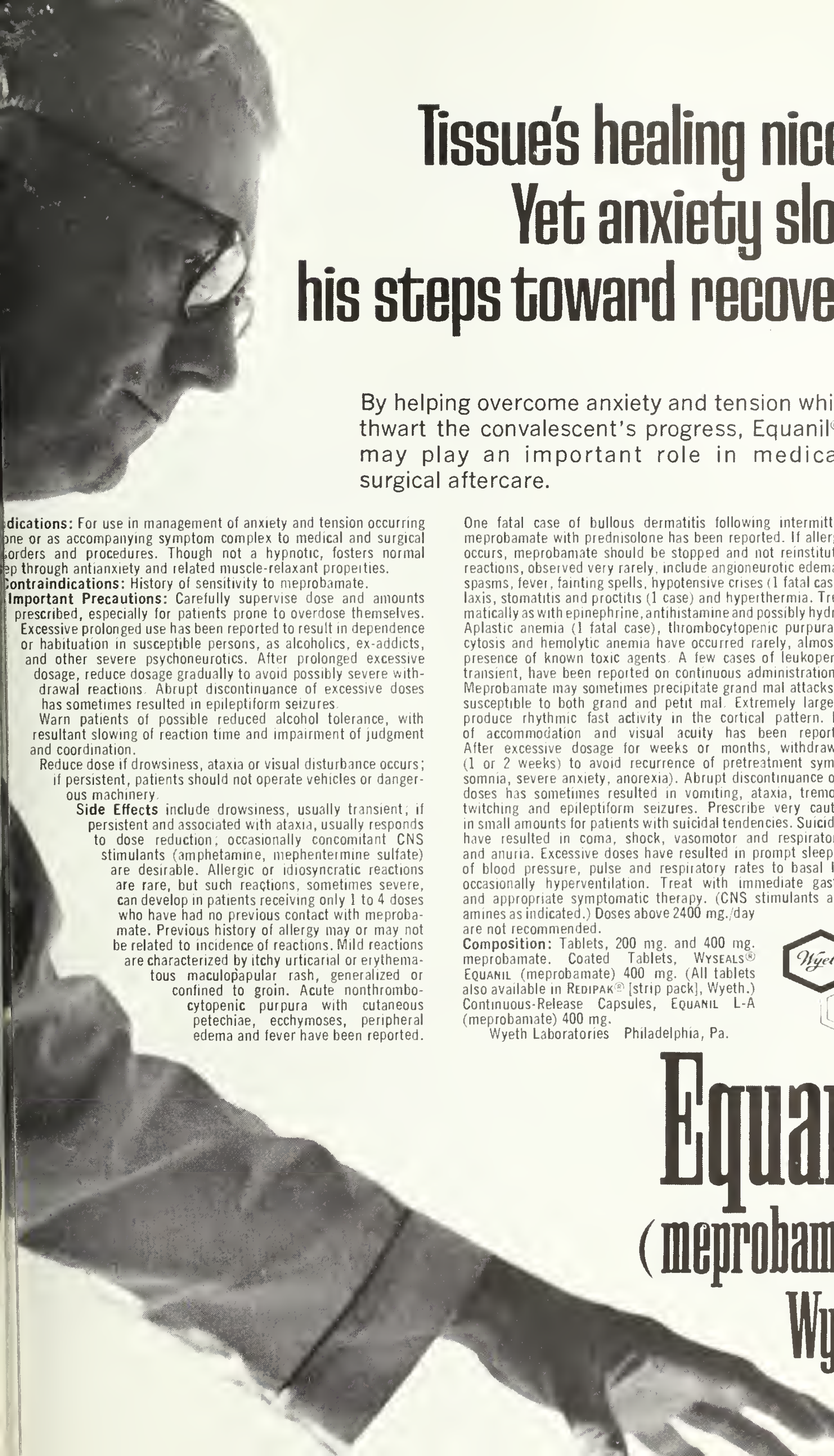

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**Composition:** Tablets, 200 mg. and 400 mg. meprobamate. Coated Tablets, WYSEALS® EQUANIL (meprobamate) 400 mg. (All tablets also available in REDIPAK® [strip pack], Wyeth.) Continuous-Release Capsules, EQUANIL L-A (meprobamate) 400 mg.

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## (meprobamate)
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Whether you prescribe Novahistine LP or Novahistine Singlet, a total daily dose of 3 or 4 tablets will usually provide effective, continuous relief.

Use cautiously in patients with severe hypertension, diabetes mellitus, hyperthyroidism or urinary retention. Caution ambulatory patients that drowsiness may result.

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*99th Year of Publication*

MAY 1968 / Vol. 88, No. 5 / Pages 107 - 132

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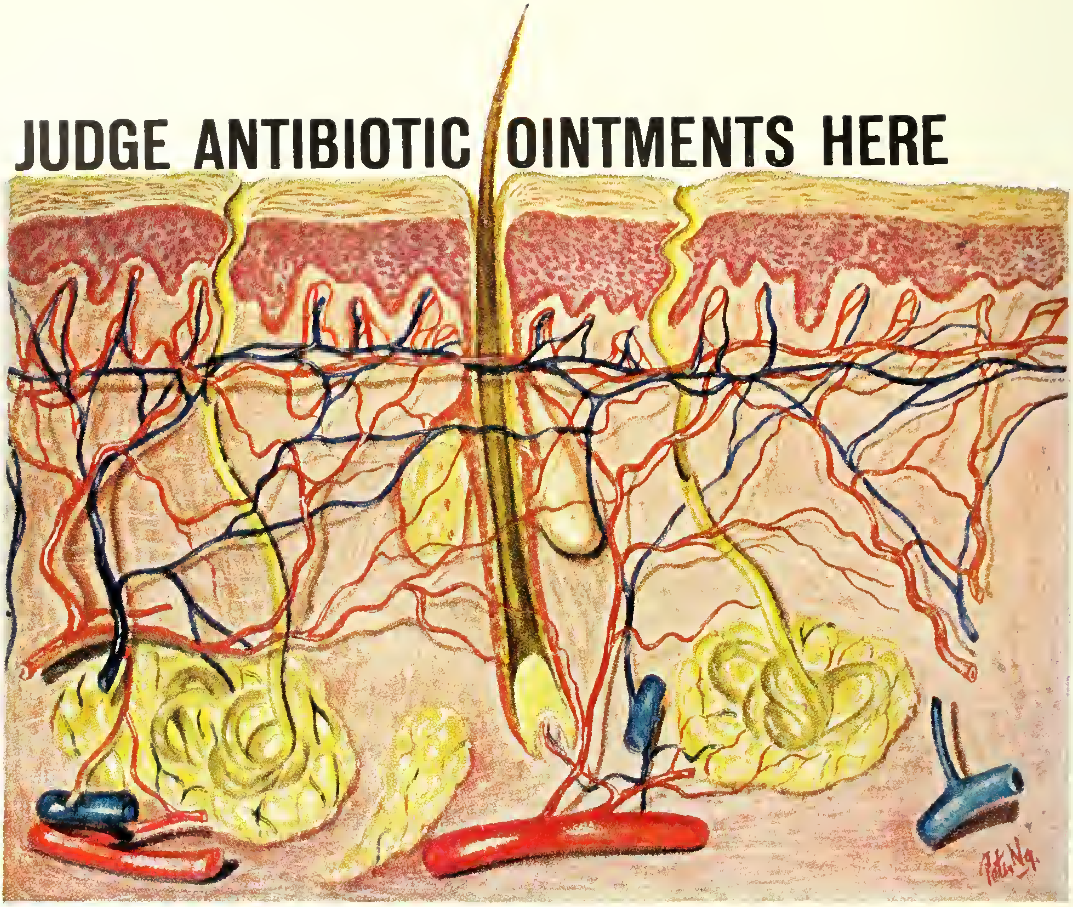

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**Flagyl**® brand of metronidazole brings
tablets/inserts

## clinical cures • microscopic cures • culture cures

For the most widespread form of vaginitis the most widely successful therapeutic agent, Flagyl, is clearly indicated.

In trichomonal vaginitis, most physicians have reported a cure-rate of 95 per cent or more with Flagyl when infected male partners are treated concurrently and when treatment is repeated for occasional refractory infections in women.

This high rate of cure obtained with Flagyl is unparalleled. Only systemically active Flagyl reaches the hidden reservoirs of reinfection in male and female genitourinary tracts.

*Indications:* Flagyl is indicated only in the treatment of trichomoniasis in both the male and female.

*Contraindications:* Pregnancy; disease of the central nervous system; evidence or history of blood dyscrasia.

*Precaution:* Complete blood cell counts should be made before, during and after therapy, especially if a second course is necessary.

*Side effects:* Infrequent and minor side effects include nausea, metallic taste and furry tongue. Gastrointestinal disturbances, flushing and headache sometimes occur, especially with concomitant ingestion of alcohol. The taste of alcoholic beverages may be altered. Other effects, all reported in an incidence of less than 1 per cent, are diarrhea, dizziness, vaginal dryness and burning, dry mouth, rash, urticaria, gastritis, drowsiness, insomnia, pruritus, sore tongue, darkened urine, anorexia, vomiting, epigastric distress, dysuria, depression, vertigo, incoordination, ataxia, abdominal cramping, constipation, stomatitis, numbness or paresthesia of an extremity, joint pains, confusion, irritability, weakness, cystitis, pelvic pressure, dyspareunia, fever, polyuria, incontinence, decreased libido, nasal congestion, proctitis and pyuria. Elimination of trichomonads may aggravate candidiasis.

*Dosage and Administration:* In women: one 250-mg. oral tablet three times daily for ten days. A vaginal insert of 500 mg. is available for local therapy when desired. When used, one vaginal insert should be placed high in the vaginal vault each day for ten days; concurrently two oral tablets should be taken daily.

In men: When trichomonads are demonstrated, one 250-mg. oral tablet twice daily for ten days in conjunction with treatment of his female partner.

*Dosage Forms:* Oral tablets–250 mg.
Vaginal inserts–500 mg.

**SEARLE** *Research in the Service of Medicine*

The Journal-Lancet Volume 88, No. 5, MAY 1968

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*Indications:* Tofrānil is recommended for the treatment of depressive states of diverse psychopathology.
*Contraindications:* The concomitant use of Tofrānil and monoamine oxidase inhibiting (M.A.O.I.) compounds is contraindicated. Hyperpyretic crises or severe convulsive seizures may occur. Potentiation of adverse effects can be serious or even fatal. An interval of at least 7 days after M.A.O.I. therapy has been discontinued should be allowed before Tofrānil may be substituted. Initial Tofrānil dosage should be low, increases should be gradual, and the patient's progress should be carefully observed.
*Warning:* Clinical reports have suggested that there may be a risk of teratogenesis associated with the use of this compound during the first trimester of pregnancy. Unless, in the opinion of the prescribing physician, the potential benefits outweigh the possible risks, Tofrānil should not be used during the first trimester of pregnancy.
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*Precautions:* Since suicide is always a possibility in severely depressed patients and one which may persist until significant remission occurs, such patients should be carefully supervised during early treatment with Tofrānil. Some severely depressed patients may also require hospitalization and/or concomitant electroconvulsive therapy.
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The drug is not recommended at
present time in patients under 12
of age.
*Adverse Reactions:* Dryness of th
mouth, tachycardia, constipation,
turbances of accommodation, sw
ing, dizziness, weight gain, urinar
frequency or retention, nausea an
vomiting, peripheral neuritis, mild
parkinson-like syndrome, tremors
rare cases of falling in elderly patients, confusional states (with su
symptoms as hallucinations and c
orientation), activation of psycho
schizophrenics and agitation (inc

# When a milestone in life is marred by depression...

Often in the mind of the lonely, widowed, depression-prone individual, she's not gaining a daughter...she's losing a son. The occasion may be marred by depression with such symptoms as feelings of sadness, incapacity, helplessness and hopelessness.

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Toxic reactions severe enough to require discontinuation of Tofrānil are uncommon. However, for complete details, please refer to the full prescribing information.

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may require dosage reduction
r addition of a tranquilizer or
orary discontinuation of the drug,
ptiform seizures, orthostatic
ension and substantial blood
ure fall in hypertensive patients,
ra, transient jaundice, bone mar-
epression including agranulocy-
sensitization and skin rash
ing photosensitization, eosino-
, and mild withdrawal symptoms
dden discontinuation after pro-
d treatment with high doses.
sional hormonal effects (im-
ce, decreased libido, and estro-
effects) may be observed.
ne-like effects may be more
unced (e.g. paralytic ileus) in
ptible patients and in those
anticholinergic agents (includ-
tiparkinsonism drugs).
*tient Adult Dosage:* Initially,
. daily, increased, if necessary,

to 150 or 200 mg. Maintenance dosage may be lower, 50 to 150 mg. daily, if possible.
*Geriatric and Adolescent Dosage:* Initially, 30 or 40 mg. daily, which may be increased according to response and tolerance. It is usually unnecessary to exceed 100 mg. daily.
A lag in therapeutic response, lasting from a few days to a few weeks, should be expected. When dosage recommendations are already being followed, increasing the dosage does not normally shorten this latency period and may increase the incidence of adverse reactions.
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Use cautiously in patients with severe hypertension, diabetes mellitus, hyperthyroidism or urinary retention. Caution ambulatory patients that drowsiness may result.

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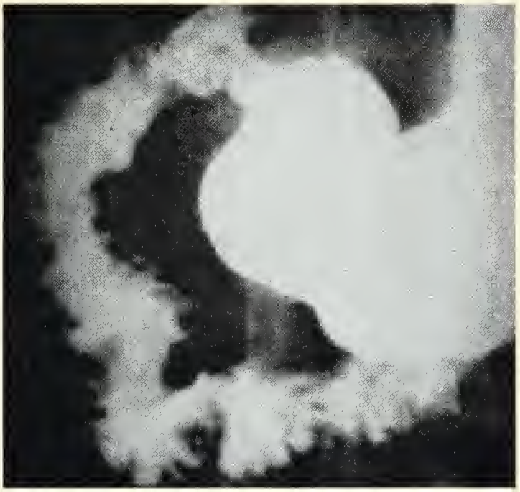

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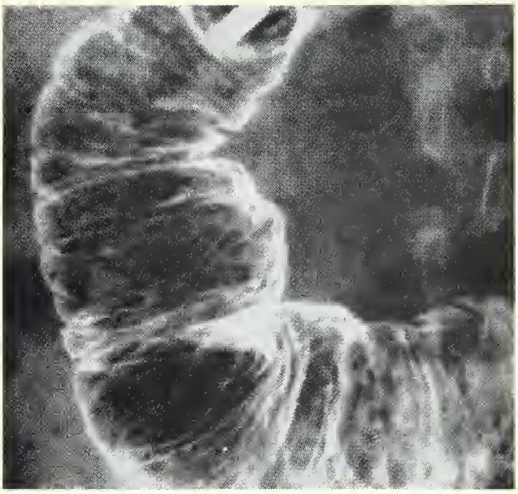
The restless duodenum makes radiographic diagnosis difficult, uncertain and often unproductive: Is this duodenum abnormal?



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**How the X-rays were taken**
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*Precautions:* Since varying degrees of urinary hesitancy may occur in elderly males with prostatic hypertrophy, this should be watched for in such patients until they have gained some experience with the drug. Although never reported, theoretically a curare-like action may occur with possible loss of voluntary muscle control. Such patients should receive prompt and continuing artificial respiration until the drug effect has been exhausted.

*Side Effects:* The more common side effects, in order of incidence, are xerostomia, mydriasis, hesitancy of urination and gastric fullness.

*Dosage:* The maximal tolerated dosage is usually the most effective. For most *adult* patients this will be four to six 15-mg. tablets daily in divided doses. In severe conditions as many as two tablets four to six times daily may be required. Pro-Banthīne (brand of propantheline bromide) is supplied as tablets of 15 mg., as prolonged-acting tablets of 30 mg. and, for parenteral use, as serum-type vials of 30 mg. The parenteral dose should be adjusted to the patient's requirement and may be up to 30 mg. or more every six hours, intramuscularly or intravenously.

(1) Bilbao, M. K.; Frische, L. H.; Rösch, J., and Dotter, C. T.: Hypotonic Duodenography, Scientific Exhibit, Radiological Society of North America, Chicago, Nov. 27—Dec. 2, 1966.

(2) Bilbao, M. K.; Frische, L. H.; Dotter, C. T., and Rösch, J.: Hypotonic Duodenography, Radiology 89:438-443 (Sept.) 1967.

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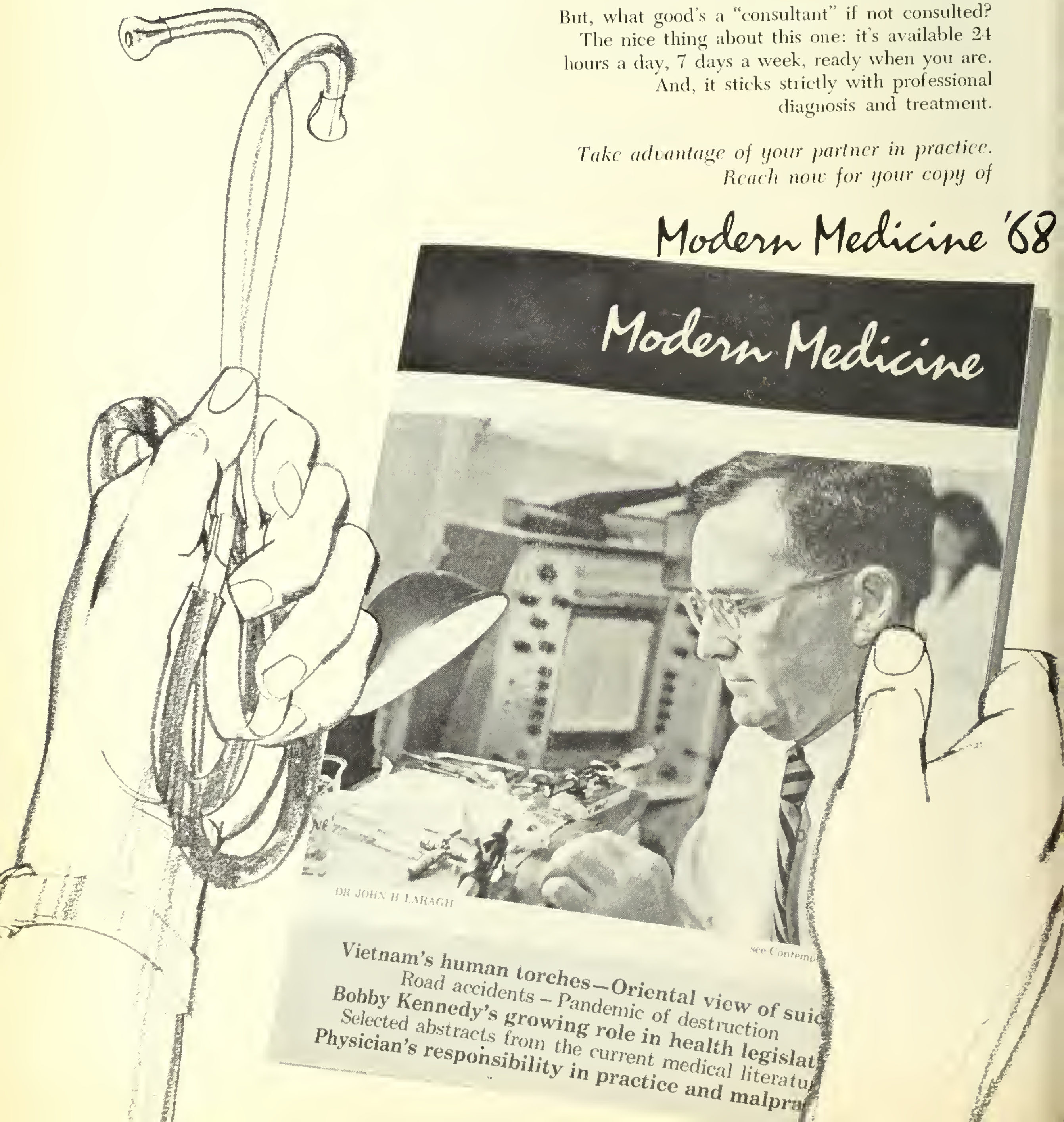

Modern Medicine

DR JOHN H LARAGH

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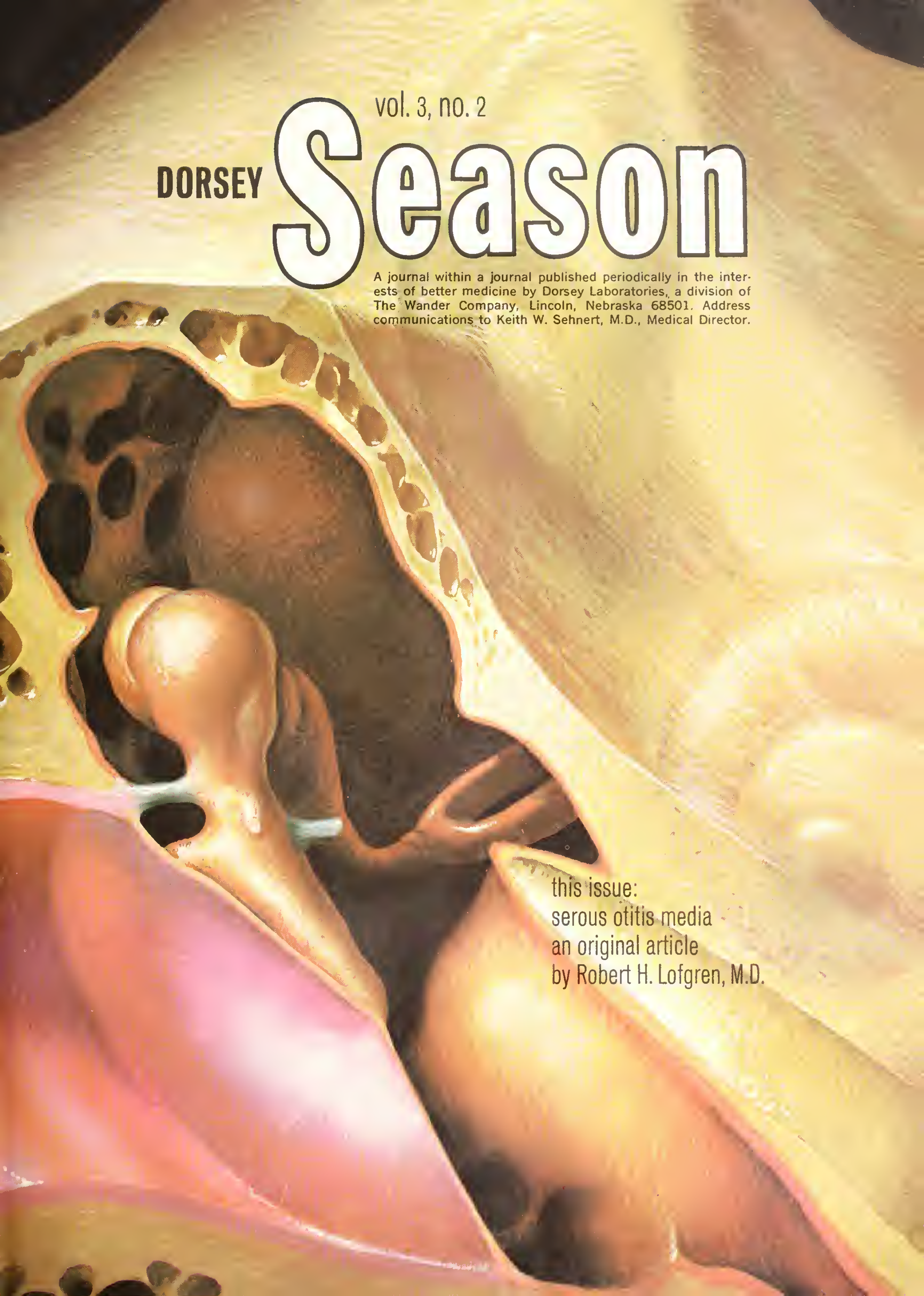
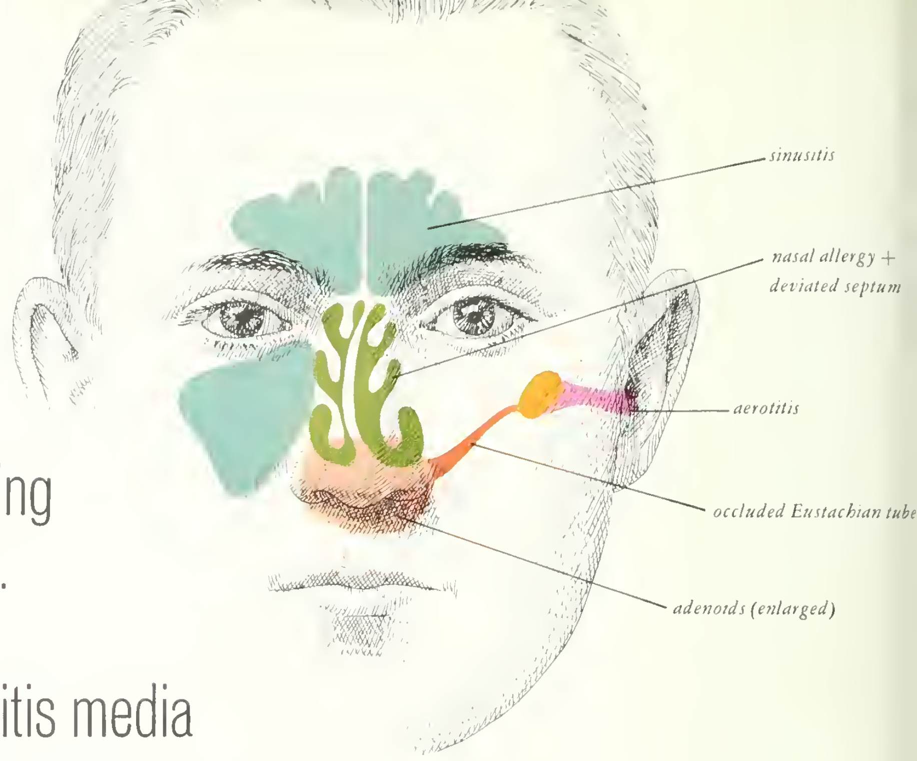


vol. 3, no. 2

# DORSEY Season

A journal within a journal published periodically in the interests of better medicine by Dorsey Laboratories, a division of The Wander Company, Lincoln, Nebraska 68501. Address communications to Keith W. Sehnert, M.D., Medical Director.

this issue:
serous otitis media
an original article
by Robert H. Lofgren, M.D.



# the complaining earache... key to serous otitis media

Robert H. Lofgren, M.D.
Associate Surgeon, Massachusetts Eye and Ear Infirmary, Boston, Massachusetts

Serous otitis media is probably the most common ear problem in children, especially in the wintertime. Diagnosis is usually easy in adults, but may be quite difficult in children, especially the very young child where one has to depend almost entirely on the physical findings.

The symptoms of serous otitis are a fullness in the ear, a mild hearing loss and mild earache. The earache can best be described as a "complaining earache" instead of a "screaming earache" as found in purulent otitis media. A young child may be irritable and pull at the ear. In milder cases, and as the ear recovers, gurgling and popping noises can be heard in the ear.

On examination one may see a yellow tympanic membrane and if a fluid level is present the diagnosis becomes easy. However, the eardrum may be dull gray, or slightly pink, or even perfectly normal. Pneumomassage using a Siegle otoscope or a closed-head electric otoscope must be done on both ears, otherwise the diagnosis will be frequently missed. Attempted movement of the drum with the pneumatic otoscope produces either a sluggish motion of the drum or no motion at all instead of the easily movable normal drum. The Rinne test is negative and there is a 15-20 decibel conductive hearing loss. The bone conduction may be better than normal and an air-bone gap may exist even with the air conduction within normal limits. Occasionally one finds a false nerve deafness on the audiogram when thick glue-like fluid causes immobility of both the oval and round window. Both conditions return to normal when the fluid is removed, but they make the interpretation of screening audiograms very difficult.

There is no single cause for serous otitis. One factor always present is blockage of the eustachian tube, but this alone is not enough to produce fluid. There must also be an inflammatory reaction. Blockage of the eustachian tube may be caused by many conditions. In children the most common cause is enlarged adenoids. In the summer the next most common cause is allergy. Upper respiratory infections or influenza are common causes in the winter. Nasal allergy, acute and chronic sinusitis, nasal septal deformity and cleft palate can all cause eustachian tube obstruction. Some children may have a congenitally small eustachian tube, but fortunately they usually "grow out of the problem."

**t**he first sign of a nasopharyngeal tumor is often a serous otitis. One must always rule this out in any adult who later in life develops repeated or persisting serous otitis. Causes sometimes overlooked are nasogastric tubes after surgery, simple obesity and cardiorenal disease, which may produce congestion in the mucosal lining of the eustachian tube. In recent years we have been seeing a new cause—acute otitis media, where the patient is adequately treated with antibiotics but where drainage has not been established either through the eardrum or down the eustachian tube. A sterile exudate is left in the middle ear.

The inflammatory response may be caused by a marked negative pressure as in air otitis from flying, or it may be from a mild bacterial or viral infection in the middle ear. Serous fluid is a good culture medium and will frequently go on to purulent otitis media, especially if the original blockage was caused by an infectious process such as acute rhinitis or adenoiditis. When the infection heals there may be scarring in the middle ear mucosa. Mucous glands develop in this tissue and pour out a thick mucoid material. This ear usually looks normal until a pneumatic otoscope is used. The objectives in treating serous otitis are to remove the obstructing agent and to provide drainage from the middle ear. Often this can be accomplished by decongestants and nose drops. If large obstructing adenoids are present they should be removed. Sinusitis should be treated with oral decongestants or nose drops, plus antibiotics where indicated. Nasopharyngeal tumors should be treated. Allergies should be treated with antihistamines and, where indicated, by desensitization.

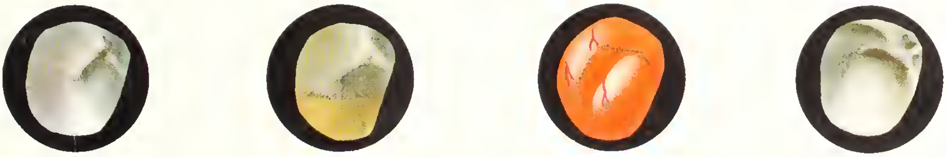
If the fluid does not clear with medical treatment within a week or two, a myringotomy should be done. If there is a question of active infection or if the fluid looks purulent, as is seen at the conclusion of acute otitis, cultures are taken. On adults this can be done in the office without anesthesia. It is no more painful than an intravenous needle for a blood test. A good safe topical anesthetic has a tremendous psychological value to the patient. Children under the age of 1 require no anesthesia. Between the ages of 1 and 3 anesthesia is not absolutely essential although a general anesthetic may be used to avoid the child's possible mistrust at follow-up examinations. I usually do the myringotomy at the same time as the adenoidectomy if the adenoids are enlarged. Once drainage has been established with decongestants or by myringotomy, positive pressure inflation of the middle ear is invaluable in forcing out the serous fluid and keeping it from reforming. The patient can do this himself by performing the Valsalva maneuver. This should be done several times a day, by taking a deep breath, holding the nose and blowing hard against the closed lips for a second or two.

In resistant cases where the fluid reforms as soon as the myringotomy heals, small polyethylene tubes are inserted through the myringotomy site. Insertion of the tubes, even in adults, usually requires an anesthetic. Good anesthesia can be obtained by infiltrating the canal wall with a local anesthetic, using a #27 needle. Once inserted the patient has no sensation of the tubes' presence. Be careful to caution the patient or parents not to allow any water to get into the ear canal while a myringotomy is open or a tube is in place. Water can be kept out by a pledget of lamb's wool in the ear canal or a cotton pledget thickly coated on the outside with petroleum jelly. I check these patients a week after a myringotomy to be sure it is healed and at two month intervals until the tubes have fallen out, usually within three to six months after insertion.

The mucoid type of fluid is so thick and tenacious that it is appropriately called a glue ear. It is aspirated only with difficulty through the eardrum, and occasionally must be removed through a tympanotomy. This thick, glue-like fluid is prone to recur, as the myringotomy usually heals long before the mucous membrane has returned to normal. Repeated myringotomies, as many as ten or twenty, were formerly required for this condition. Now polyethylene tubes are inserted initially when this thick, glue-like material is found. At times a subacute mastoiditis may accompany the serous otitis, which will necessitate a simple mastoidectomy before the condition can be eradicated. Usually the thin serous fluid readily responds to decongestants or to a myringotomy and removal of the eustachian tube obstruction. Occasionally, however, even serous fluid will repeatedly reform. For this, resection of the tympanic plexus of nerves which lies on the promontory of the middle ear has been carried out, as the tympanic branch of the glossopharyngeal nerve is the secretomotor nerve to the ear.

Failure to diagnose serous otitis is the most common cause of the recurrent, almost continuous otitis me-

*Otoscopic Views*



*Normal* *Acute Serous* *Acute Purulent* *Chronic Serous* dia seen in young children. In these cases a myringotomy will frequently provide a long-term cure without adenoidectomy or any other surgery. Failure to do this may allow the condition to go on to acute or subacute mastoiditis. Adhesive otitis media with scar tissue binding down the ossicles or tympanosclerosis may also result with permanent impairment of hearing. The prognosis for hearing with adhesive otitis or tympanosclerosis is usually poor. If the adhesions are removed, they reform, and the same is frequently true of tympanosclerosis even after a tympanoplasty. For many of these people a hearing aid is the only solution. The constant negative pressure in long standing serous otitis media may draw in either Schrapnell's membrane or the posterior superior portion of the eardrum forming a pocket to cause a chronic otitis media with cholesteatoma, which may not become apparent until twenty or thirty years later.

The non-medical complications of improper diagnosis or treatment may be even more serious. The irritable child, the frequent bouts of acute purulent otitis media with pain and fever, the expense of antibiotics and doctors, and the time lost from school or work affect the entire family.

In summary, serous otitis has many causes. There is a blocking of the eustachian tube and an inflammatory reaction in the middle ear mucosa, the latter usually caused by a mild infection. The treatment is to provide immediate drainage by decongestants and where necessary, by a myringotomy. The obstructing agent must be removed by surgery if it is adenoid or by oral decongestants, and antihistamines or nasal spray if it is an upper respiratory infection or allergy. Occasionally resistant cases require plastic tubes placed through the eardrum or other more radical surgery. Failure to treat properly leads to hearing loss which may be permanent, repeated acute otitis media or possibly even chronic otitis media with cholesteatoma.

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# What Is the Medical Student Getting Into?

MAURICE B. VISSCHER, Ph.D., M.D.

Minneapolis

YOU HAVE ALL HEARD many times, I am sure, that medicine is in a state of revolution, or that it faces great changes and is at the crossroads, where it must choose the direction in which it will go. These generalizations are partly true and partly false. In speaking to you today about what you will face when next fall you enter the medical school, and later when you begin your professional careers, I should like to present to you my own analysis of the causes and consequences of the "revolution" in medicine.

First I want to deal with the changes in the actualities of the practice of medicine which have been going on over the last century at increasing tempo and which show no signs of decelerating. Fundamentally all of these changes have been due to increases in scientific knowledge. The doctor of medicine a century ago was a very helpless man. He had no general anesthetics, no aseptic surgery, no Roentgen ray for radiography, virtually no chemical diagnostic tools, no knowledge of the germ theory of innumerable diseases, no antimicrobial chemotherapy except for quinine, no antibiotics, no hormones, no vitamins, no electrocardiograph, nor any of a thousand and one currently useful tools for the diagnosis, prevention, cure, or amelioration of disease.

The nineteenth century doctor did the best that he could with the knowledge and the tools at his command. He had opium and, as I have already noted, quinine. He had digitalis and a few other potent agents of plant origin, which he did not know how to use as they can be used today because no one then knew enough about physiology and pharmacology to make them effective. Consequently, the doctor of those days was useful in treating simple fractures, malaria, some forms of diarrheal disease, and in giving relief to the suffering with opiates. He was also a great comfort to patients and their relatives because he was almost invariably a kindly person who had seen much pain and suffering in his life and genuinely wanted to be of help in times of trouble. One reason why he was useful was that he was usually of more than modest intelligence and a person was not likely to have elected to enter a medical career if he did not have considerable human sympathy. The practice of medicine was not a lucrative profession in those days, except for a very few noted physicians, and in general only fairly dedicated persons entered careers in it. The physician of a century ago was a friendly counselor.

Today a physician who wants to be able to give his patients the best care that modern scientific medicine can afford has a task of which his forebears never dreamed. In the first place his preparatory education is of necessity more intensive and extensive; and at least as important, because medical knowledge is increasing at a geometrically progressive rate, he must spend large fractions of his time in study throughout his active lifetime to keep up with the advancements. Medical education today involves lifetime learning.

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MAURICE B. VISSCHER *is Regents Professor of Physiology, University of Minnesota, Minneapolis.*

It is frequently said, and I suppose that most of you have heard it, that the modern scientific doctor of medicine, with all his specialized scientific knowledge and skills, is less interested in being helpful to his patients than were physicians in what I shall call the prescientific era. I have heard such charges and also nostalgic wails for a return of the good old friendly doctor of yesteryear.

Candidly, after having observed some of the changes in my own lifetime, I want to say that I consider such charges to be false, as a generalization. The facts are that physicians today, if they are to be good physicians, must spend so much of their time in continued learning that they cannot spend much of it "passing the time of day" chatting with each patient. Furthermore, simply because of the greater real help that modern medicine can give to sick people, there is more demand on every doctor's time for seeing more patients. Increasing the ratio of physicians to the population would undoubtedly do more to restore some of the older feeling on the part of patients that physicians cared about them as persons, than any amount of exhortation could, because doctors would then not individually be so heavily loaded. I do not deny that some doctors would probably still run a sort of assembly line of patients through their offices. There are greedy people in every profession, but reducing the pressure on all doctors would diminish the opportunity for the more commercially minded to operate such "mills" and would relieve the great majority of physicians who are genuinely interested in their patients from the pressures to accept larger loads than they can carry effectively.

It is said that the medical profession is at a crossroad today with regard to policy as to expansion of training of doctors. Certainly this country and, in fact, the world are involved in making decisions on this score. However, the decisions are really not for us in medicine to make. The public is making the decisions. Why? I believe it is very simple. Every educated and informed man and woman in the world knows that modern medicine has precious things to offer to them and their children. The educated public knows that there are too few scientifically trained doctors and supporting personnel to go around, even in this relatively lavishly supplied country. In less privileged countries the situation is worse, and in the least advanced countries it is so indescribably bad as to be almost unbelievable to us in America. As more and more of the public in any country becomes educated and informed about what medicine can do they demand—and will continue to demand—more health professionals. They will also demand more efficiency and economy, but I do not believe that they will tolerate reduction in overall quality of medical care. In summary, we in medicine should realize that this part of the revolution that engulfs medicine is an inexorable part of two others in our society, the scientific and educational revolutions. We in the medical profession are indeed partly responsible for the scientific revolution, but nothing that we can now do will alter its consequences greatly, I think. And furthermore, I think that we should be very pleased with ourselves for the part we have played in bringing matters to the state they are now in. We are dedicated to serving human welfare through the practice of a learned profession. Because we have improved our capacity to so serve is certainly no cause to grieve. And because the public now cries for such better service is also no reason to complain.

In beginning your formal medical education at this university next fall you will be continuing your education, which actually began, of course, in your elementary school, but now is going to be more sharply focussed on a specific career objective than it was before. However, you should know that you still have many options open to you, even within your formal educational years, and especially so because our medical school is entering next fall into a revised program which will allow more freedom of choice for students. It will allow you to choose between numerous alternatives, even within the four years of formal medical school enrollment. A few of you will undoubtedly want to prepare yourselves as well as possible for careers in medical research or combined research and teaching, or combinations of research, teaching, and clinical practice. For such persons we have a special combined M.D.-Ph.D. program, to permit a highly individualized opportunity for intellectually gifted students to work expeditiously toward such objectives. Training grant funds are available to support such students during the time they are enrolled in the graduate school, ordinarily three or four years, and a few scholarships are also available on a nationally competitive basis for support through both graduate and medical education. Any of you who may be interested in these types of careers should inquire as to how to apply for an opportunity to avail yourselves of the program. I must add one word of caution, unfortunately. The new Selective Service Act has not as yet been interpreted as to whether such a program, which requires a total of six or more years for completion, will justify deferment from compulsory military service. It is our hope that the National Manpower Commission will rule that the preparation of teachers and investigators in medicine is a high priority matter in the national interest. But at the present moment any plans you might like to make on this score should be tentative and contingent upon the commission's decisions. This situation is one of the many dislocations and tragedies of the Vietnam War. However, if graduate education to fill the expanding need for scholars in many areas is stopped for any great length of time, the damage to our nation's future will be incalculable.

I cannot refrain at this point from digressing briefly from my main theme, because I want to urge you young people to think broadly about the problem that the Vietnam War confronts us with in the whole field of education. America is great and strong today almost entirely because of her great potential of trained manpower. Our natural resources are important, too, but they could not have been exploited, and cannot be further developed, without trained manpower. Many people in this country do not realize the crucial importance of free public education through high school levels, and of the relatively economical education through the college level, to the great wealth and power of the United States. As compared with any other country in the world, the United States has the largest fraction of its youth obtaining college-level education. Advanced technology requires such education on a large scale. Of course, advanced medical care also requires such education. What we call the American Way of Life would be a recollection rather than a reality if we were to abandon our postbaccalaureate education program for the duration of a long war. Any bachelor's degree educational programs would also suffer greatly because teachers of undergraduate college students need graduate training, too.

To return to my particular theme, I want to point out that our new curriculum will make it possible for you to move in any one of several directions as to the field of medicine in which you would like to practice while you are in the medical school. Medicine today covers such a vast area of knowledge and skills that a large majority of physicians now choose to cover a limited portion of the field. The rise of specialization in medicine has been so great that there is now considerable complaint from the public that too few physicians are available to consult for colds and sniffles or for emergencies of all sorts. This problem is indeed not a trivial one nor easily solved. Our medical school has responded to it by setting up a program designed to begin equipping physicians to serve as "physicians of first call" in line with the recommendations of the Millis Commission. One of its objectives will be to provide opportunity, for those of you who would choose this type of career, to devote more than the required amount of time to internal medicine and pediatrics (which is really internal medicine for children), and to obstetrics, to fit yourselves for further training for what is now called Family Practice. Hopefully, this will become a recognized specialty field in which a physician can become so well trained that only in very special problem cases would he have to call in a superspecialist to help him give optimal professional care to a patient. Medical professional and lay public opinion seem to be fairly well agreed that such physicians of first call could provide an answer to part of the need for continuity of medical attention and more ready availability of medical attention. Obviously, however, it cannot meet the whole need. Every day hundreds of persons in this nation are gravely injured in automobile and other accidents. Every day hundreds of other medical and surgical emergencies occur which require the services of superspecialists. These emergencies occur in the country as well as in the cities. The training of more doctors for family practice will, I believe, be a good thing but it will not solve the major problems of distribution of medical care.

Most of you here today will very probably become specialists or superspecialists in one or another rather conventional field of medical practice. You will then find, as specialists do today, that you will have to continue a program of lifetime learning to keep abreast of advancements in your specialty and to remain adequately informed about advancements in medicine broadly so that you can perform your specialty functions fully. If you enter Family Practice you will have at least as hard a prospect because you will have to be informed about and alerted to the possibilities of detection and management of diseases of all sorts and know when to refer to other more limited specialists.

You are going to enter the medical field in a time of challenge. There is the challenge of the search for new knowledge. The physicists have in the last quarter century shown us how to release the energy of the atom, and in so doing they have shown us the way and given us the means to destroy all life on the planet or, more hopefully, to provide enormous sources of power. The biologists have, within the past month in fact, synthesized the DNA molecule and have pointed the way to control what was previously the most mysterious part of life itself, the replicative process. The partial elucidation of the structure of DNA and the character of the genetic code has all been accomplished within the last twenty-five years. It is considered by many scientists to be the major biomedical achievement of all time because it goes far toward removing the veil from the mystery of life itself. The philosophic as well as the practical implications of the results of this quarter century of research are incalculable. The physicists and chemists have given us great understanding of and control over our environment. Biological research is now giving us understanding and means for control of our very selves. The uses to which these new powers may be put can be either good or bad. Every discovery in science raises new moral problems. The scientist, perhaps unfortunately, but nevertheless definitely, cannot fully control the uses to which his discoveries and inventions will be put. The experts must, however, if they are moral men, refuse to cooperate in immoral uses. The Oath of Hippocrates which has guided physicians for thousands of years states this principle. We have a current problem here especially in connection with chemical and biological warfare. Physicians of tomorrow will have still more problems in this regard.

Moral men who have special knowledge have another obligation today which is to help laymen understand the problems which confront them for decision-making when those decisions must be based on scientific and technical knowledge. We in medicine today have, and you tomorrow will also have, a tremendous responsibility in this regard, if we have any sense of moral responsibility at all. Too many educated men and women shirk their greatest moral responsibility to society. The greatest responsibility that anyone has is to use his or her talents for the greatest public good. As informed persons we must help the public understand so that when it makes decisions it will have been as fully informed as possible.

In relation to medicine and medical care, many public decisions are going to be made in your lifetimes. The public, not you or I, will decide how the economics of medical care will be arranged. It will ultimately decide how medical manpower will be used. It will decide whether and how birth control and abortion will be practiced, how clinical research on human subjects will be controlled, and whether and how new knowledge about the control of genetic processes will be applied. For you and for me there is only one way to influence the decisions, and it is our duty, if we have a sense of moral responsibility, to do so. We must help the public understand the scientific and technical realities and the probable consequences of any decisions that they might make. The root meaning of the word doctor is teacher. We must not forget it.

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Talk presented to the freshman class accepted to begin medical study in September 1968; coffee hour and program on Wednesday, December 27, 1967, in Mayo Memorial Auditorium, University of Minnesota Medical Center.

# Sustained Action Glyceryl Trinitrate in the Treatment of Angina Pectoris

ITALO EVANGELISTA, M.D.

Everett, Massachusetts

THE CLINICAL SYNDROME of angina pectoris was first clearly described by Heberden[1] in 1768. Therapy for angina pectoris and coronary insufficiency with glyceryl trinitrate was described by Hering[2] in 1849, following the reports of chemical production by Sobrero[3] in 1847. After the usual flurry of use and misuse for various conditions, interest lapsed until its reintroduction by Murrell in 1879. Following the use of amyl nitrite in lowering blood pressure, glyceryl nitrate was tested for this purpose; both drugs were found to be effective in symptomatic relief of Heberden's angina pectoris. With continued use many authorities have stated that glyceryl trinitrate has become the drug of choice for relief of angina pectoris.[4] The mode of action in patients with angina pectoris is still unsettled. However, glyceryl trinitrate, alone or in combination with various sedatives or tranquilizers, has been employed in the treatment of this syndrome and has enabled such patients to restore their lives to near normal.

The obvious difficulty with sublingual glyceryl trinitrate therapy is the short duration of action and constant need for frequent administration. Berry and Roach[5] analyzed blood serum for total nitrates by the Yagoda method and observed that sublingual administration of 1.2 mg. of glyceryl trinitrate showed a beginning increase in serum nitrate level after two minutes; reaching a peak at four minutes for six minutes; then returning to the preadministration level by the fifteenth minute. They state: "It is of interest that the blood nitrate levels lag behind the expected time for clinical relief of the anginal pain." Such brief duration of effect often results in patients requiring the ingestion of a large number of tablets daily. In addition, since the duration of effect is so short, sublingual therapy cannot be used as a prophylactic for acute anginal attacks; the patient must first experience the pain before taking the medication. Furthermore, the psychological effects in patients requiring such frequent medication may be a problem. Another drawback is the development of "peaks and valleys" of response, coupled with inability to prevent nocturnal attacks. Because of these drawbacks, the need for antianginal drugs with more prolonged effect became obvious. Many agents have been used for this purpose, including mannitol hexanitrate, bismuth subnitrate, and sodium nitrite; however, most of these have shown little merit in clinical practice.

While characteristic symptoms develop promptly in animals or in humans after contact or ingestion of glyceryl trinitrate, including headache and hypotension, available information based on widespread use essentially does not indicate that therapeutic doses of glyceryl trinitrate develop a tolerance or show any significant acute toxicity hazard.[6] Chronic exposure by ingestion, inhalation, or absorption through the skin may produce transitory characteristic headaches, methemoglobinemia, or other side effects. With continued exposure to excessive quantities, tolerance to these side actions develops. No evidence of permanent harm, tissue damage, or death due to chronic exposure have been found in studies of current literature.[7]

Clinical evaluation of glyceryl trinitrate therapy in angina pectoris has long been a problem, since the primary basis for such evaluation must rest with the presence or absence of chest pain. It is well known that considerable variations occur between different individuals, as well as in the same individual at different times, in their perception and response to pain of any type, and this is equally true in a case of anginal pain. This is rather difficult in trials on patients who have been experiencing chest discomfort after exercise for many years and who have been taking glyceryl trinitrate tablets at frequent inter-

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TABLE 1

2.6 MG. NITROGLYN vs. PLACEBO—BENEFITS

| *Patients* | | | | *Exercise tolerance* | | | | *No. Nitroglycerin tablets* | | | | *Overall changes* | | | | *Side effects reported* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | *Change* | | | | *Change* | | | | *Change* | | | |
| *No.* | | *Sex* | *Age* | *Ngl/P* | + | *0* | — | *Ngl/P* | + | *0* | — | *Ngl/P* | + | *0* | — | |
| 1 | AC | M | 35 | SW/S | | | — | --/+ | | | — | GG/P | + | | | None |
| 2 | V | F | 39 | SS/S | | 0 | | --/S | | | — | GG/P | + | | | |
| 4 | L | F | 59 | SS/S | | 0 | | --/- | | 0 | | GG/G | | 0 | | |
| 5 | T | M | 59 | SI/S | + | | | S-/S | | | — | PG/P | + | | | None |
| 6 | PP | F | 62 | SS/S | | 0 | | S-/S | | | — | PG/P | + | | | None |
| 7 | DP | F | 68 | SS/S | | 0 | | --/S | | | — | GG/P | + | | | Hoarse |
| 8 | M | F | 68 | SS/W | + | | | -S/S | | | — | GF/P | + | | | |
| 9 | N | F | 71 | SS/S | | 0 | | S-/S | | | — | PG/P | + | | | |
| 10 | SS | F | 71 | SS/S | | 0 | | --/S | | | — | GG/P | + | | | None |
| 11 | T | F | 72 | II/S | + | | | --/S | | | — | GG/P | + | | | None |
| 13 | McG | F | 81 | SS/S | | 0 | | S-/S | | | — | PG/P | + | | | |
| 14-I | CE | M | 64 | II/S | + | | | --/S | | | — | GG/P | + | | | None |
| 15-I | CS | M | 57 | IS/S | + | | | -S/S | | | — | GP/P | + | | | None |
| 14-II | CE | M | 64 | I/SS | + | | | -/SS | | | — | G/PP | + | | | None |
| 15-II | CS | M | 57 | I/SS | + | | | -/SS | | | — | G/PP | + | | | None |
| 16 | B | M | 48 | I/SI | + | | | -/S- | | | — | G/PG | + | | | Headache |
| 19 | MH | F | 59 | S/SS | | 0 | | -/SS | | | — | G/PP | + | | | Headache |
| 20 | GM | F | 60 | I/SS | + | | | -/SS | | | — | G/PP | + | | | None |
| 21 | N | M | 61 | I/IS | + | | | -/-S | | | — | G/GP | + | | | |
| 24 | T | M | 62 | I/SI | + | | | -/S- | | | — | G/PC | + | | | |
| 25 | W | F | 63 | S/SS | | 0 | | -/SS | | | — | G/PP | + | | | |
| 26 | T | M | 68 | S/SS | | 0 | | -/SS | | | — | G/PP | + | | | None |
| 27 | B | M | 71 | S/SS | | 0 | | -/SS | | | — | G/PP | + | | | |
| 28 | A | F | 82 | I/SS | + | | | -/SS | | | — | G/PP | + | | | Flush face |
| Increase | (+) | | | | 12 | | | | 0 | | | | 23 | | | |
| Same | ( 0 ) | | | | | 11 | | | | 1 | | | | 1 | | |
| Decrease | (—) | | | | | | 1 | | | | 23 | | | | 0 | |

Footnotes:

W = Worse
S = Same
I = Improved

I = Increased number
S = Same
— = Decreased number

P = Poor
F = Fair
G = Good

| | |
|---|---|
| None | = 11 |
| Headache | = 2 |
| Hoarse | = 1 |
| Flush face | = 1 |

vals throughout. The purpose of this clinical study was to test the effectiveness of a sustained-action form of glyceryl trinitrate in the treatment of angina pectoris in a double-blind experiment in comparision with an inert placebo, following oral administration, and to observe any adverse side effect that might develop from such therapy. For this purpose, a sustained-action tablet containing 2.6 mg. (1/25 grain) of glyceryl trinitrate (Nitroglyn®) was used. This preparation provides sustained release of glyceryl trinitrate following ingestion and prevents the uncertainty associated with sublingual medication. A series of 28 patients were included in this investigation, each of whom had been previously diagnosed as suffering from angina pectoris over a number of years, and who had been receiving the usual medical treatment for such condition. The group consisted of 12 males and 16 females, and ranged in age from 35 to 82 years (two treated twice, so recorded as 30 patients).

The sustained-action glyceryl trinitrate tablets and placebo tablets of identical color were packaged in identical containers, identified by letters "A" through "F". Neither the physician nor the patient was aware of the identity of the products corresponding to these letters until after the investigation had been completed. The glyceryl trinitrate tablets were then found to be identified under letters "A", "C", and "E"; the

TABLE 2

2.6 MG. NITROGLYN vs. PLACEBO–NO BENEFITS

| Patients | | | | Exercise tolerance | | | | No. Nitroglycerin tablets | | | | Overall changes | | | | Side effects reported |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Change | | | | Change | | | | Change | | | |
| No. | | Sex | Age | Ngl/P | + | 0 | − | Ngl/P | + | 0 | − | Ngl/P | + | 0 | − | |
| 3 | DeA | F | 57 | II/I | | 0 | | -S/- | + | | | GF/G | | | — | |
| 12 | K | M | 75 | WW/S | | | — | SS/S | | 0 | | PP/P | | 0 | | |
| 17 | P | M | 54 | S/SS | | 0 | | S/SS | | 0 | | P/PP | | 0 | | |
| 18 | M | F | 56 | S/SS | | 0 | | S/SS | | 0 | | P/PP | | 0 | | Warmth:dizzy |
| 22 | DJ | M | 61 | S/SS | | 0 | | S/SS | | 0 | | P/PP | | 0 | | |
| 23 | AN | F | 62 | S/WS | + | | | S/SS | | 0 | | P/PP | | 0 | | None |
| Increase | | (+) | | | 1 | | | | 1 | | | | 0 | | | |
| Same | | ( 0 ) | | | | 4 | | | | 5 | | | | 5 | | |
| Decrease | | (—) | | | | | 1 | | | | 0 | | | | 1 | |
| Footnotes: | | | | W = Worse<br>S = Same<br>I = Improved | | | | I = Increased number<br>S = Same<br>— = Decreased number | | | | P = Poor<br>F = Fair<br>G = Good | | | | None = 1<br>Warmth: dizzy = 1 |

placebo tablets were labelled as "B", "D", and "F". The course of therapy was 1 tablet, 3 times daily, for a period of fourteen days. Fifteen patients were treated with "A" for fourteen days, "B" for fourteen additional days, and followed by "C" for fourteen days more. Two of these and 13 new patients were then treated first with "D" for fourteen days, followed by "E," and then by "F" for fourteen-day intervals. Thus, one-half of the patients were first treated with glyceryl trinitrate followed by placebo and then by glyceryl trinitrate; the other one-half received the glyceryl trinitrate after and again before placebo tablets. The basis for evaluation of therapy in each patient consisted of the change in exercise tolerance during each of the 3 treatments; the change in the number of 1.2 mg. glyceryl trinitrate tablets taken sublingually during each interval; and the overall results based on changes in electrocardiograms, supplemented by clinical impressions. Exercise tolerance was evaluated as: Worse, Same, or Improved. The number of nitroglycerin tablets taken sublingually was recorded as Increased Number, Same, or Decreased Number. The overall change if "Poor or Fair" was regarded as an unsatisfactory clinical response; if "Good," as satisfactory. In addition, side effects were sought. Results for the group considered to be benefited are recorded in Table 1 and for the group for whom no benefits were indicated in Table 2.

In considering the 24 patient-trials, it will be noted that the exercise tolerance was improved in 12 and unchanged in 11. So far as the ingestion of glyceryl trinitrate tablets sublingually was concerned, there was definite decrease in requirements in 23 trials. Similarly, the overall change as a result of the administration of sustained-action glyceryl trinitrate tablets showed improvement in 23 tests. So far as side effects were concerned, mild, fleeting headaches were noted in 2 subjects, hoarseness in one, and a flushed face in another; none of these effects were serious and they all disappeared with continued medication at the same dose level.

Table 2 records results obtained in 6 trials in which the patient did not show definite benefit at the chosen dose level. It is probable that a larger dose than 2.6 mg. would have been effective. In these, only 1 reported a side effect of warmth and dizziness at first, which disappeared during continued administration of the same dose of the glyceryl trinitrate tablet.

Combining responses in the entire study, there were 32 reports of benefit ("Good") and 13 reports of "Fair and Poor" in the 45 trials with Nitroglyn, by contrast to 5 "Good" and 40 "Fair and Poor" following the placebo. These results are shown in Table 3 as a basis of calculation for Chi Square, using the Yates correction. For

TABLE 3

CHI SQUARE: NITROGLYN vs. PLACEBO STUDY

| Result | Nitroglyn | Placebo | Total |
|---|---|---|---|
| Good | 32($f_{11}$) | 5($f_{21}$) | 37($N_1$) |
| Fair & poor | 13($f_{12}$) | 40($f_{22}$) | 53($N_2$) |
| Total | 45($n_1$) | 45($n_2$) | 90(N) |

$$X^2 = \frac{N\,(f_{11}\ f_{22} - f_{21}\,f_{12} - N/2)^2}{n_1 \times n_2 \times N_1 \times N_2} =$$

$$\frac{99\,[(32 \times 40) - (5 \times 13) - 99/2]^2}{45 \times 45 \times 37 \times 53} = \frac{123{,}201{,}000}{3{,}971{,}025} = 31$$

$P = 0.01$; $df = 3$; $X^2 = 11.345$

3 degrees of freedom, a P value of 0.01 is associated with $X^2$ of 11.345. Here, $X^2$ has a value of 31, indicating statistically a very, very high degree of significance in their favorable response to Nitroglyn as compared with their response to the placebo in these patients.

It became obvious during the study that patients receiving this sustained-action glyceryl trinitrate tablet were able to live in their society with a more relaxed attitude, since the constant fear of developing acute chest pain with varying degrees of exercise was all but removed. The patients while on active medication were gratified to learn that the need of taking glyceryl trinitrate tablets sublingually during working hours (often during conferences or meetings) was no longer present.

The difficulty in evaluating any drug on the basis of clinical observation in patients' subjective responses became quite apparent during this study. It is not easy to determine accurately whether the chest pain is secondary to exercise, represents true anginal syndrome, or is due to another unknown factor. The emotional constitution of any of these patients is such that the presence or absence of chest pain is the primary thought throughout the day. Nevertheless, fully realizing these handicaps, a definite conclusion could be drawn from the study since all factors were in operation in patients either being administered active medication or placebo. It is quite obvious that the sustained-action glyceryl trinitrate in dosages of 2.6 mg., 3 times daily, was a valuable aid in the treatment of angina pectoris.

## SUMMARY

1. Thirty patients with angina pectoris received as treatment sustained-action nitroglycerin tablets (Nitroglyn) and a placebo in a double-blind crossover study.

2. Excellent to good results were obtained with this dose of Nitroglyn in 32 of the 45 treated periods.

3. Of the 45 treated periods with placebo, 5 were termed good.

4. Calculation of the Chi Square value of 31 revealed P of much less than 0.01.

5. Side effects were infrequent; they only consisted of mild, fleeting headache, dizziness, and flushing in 4 patients. These side effects were of such minor severity that medication was not discontinued.

6. Sustained-action glyceryl trinitrate (Nitroglyn) in dosage of 2.6 mg., 3 times daily, is an excellent aid in the medical management of angina pectoris.

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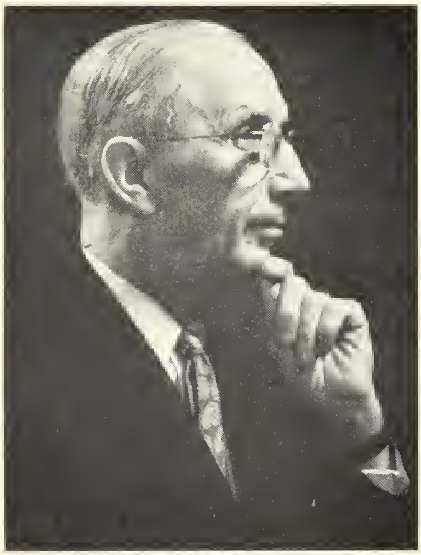

*Friends Pay Tribute to*

# Dr. Harold S. Diehl

*Remarks given at the dinner in honor of Dr. Diehl's formal retirement as deputy executive vice-president for research and medical affairs of the American Cancer Society, Waldorf-Astoria Hotel, January 1968*

WILLIAM B. LEWIS, LANE W. ADAMS,
and JAMES MONAHAN
New York City
ROGER A. HARVEY, M.D.
Chicago
OWEN H. WANGENSTEEN, M.D.
Minneapolis

MR. LEWIS: *This is a family occasion, and we have tonight what they would call in Latin America an extended family. We all feel very much related to this man and while there are a number of us here, I can assure you this is a very small fraction of those who know, admire, and love Harold S. Diehl.*

*We have invited a few people to help express some of our regard for Harold—first of all, the president of the American Cancer Society, Dr. Roger A. Harvey of Chicago.*

## Dr. Harvey

IT IS MY PRIVILEGE to acknowledge the contribution that Harold S. Diehl has made to cancer control.

It would be easy to recite a long list of achievements made by the American Cancer Society during his tenure as senior vice-president for research and medical affairs. It would be honest to say that the progress made could be attributed in a considerable degree to his leadership, energy, and dedication during these ten years.

But we might give a greater measure of his contributions if, instead, I mentioned the areas of unique service that only a Dr. Diehl could have rendered to this organization. First, though, we must place his career in cancer control in its proper perspective. He was recruited to the American Cancer Society at the close of a brilliant term as dean of one of the nation's most prominent medical schools. He was widely acclaimed as a medical educator and medical author. He had, in fact, concluded an outstanding mission in medical administration. Perhaps he took one day off and didn't like what he saw on daytime television. Anyway, he responded when told "There are other worlds that need your talents and experience." He took up the challenge willingly and with characteristic enthusiasm.

Dr. Diehl brought with him a philosophy of medicine that was ready-made for the task at hand. He knew, as most physicians do today, that the efforts to control cancer lie ultimately in the hands of the practicing physician who must make the diagnoses and who must apply the therapies in time to be successful. He knew, as we do now, the way to instruct, to persuade, and to assist the physician in cancer diagnosis and treatment is through the professional organizations to which the practitioner is so closely allied.

To accomplish this task called for a medical statesman of stature and wisdom. Harold Diehl filled this role with exceptional success. The immensity of this achievement cannot be fully

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WILLIAM B. LEWIS *is chairman of the Board of Directors of the American Cancer Society and was chairman of the dinner for Dr. Diehl.* LANE W. ADAMS *is executive vice-president of the American Cancer Society.* JAMES MONAHAN *is a senior editor of* Reader's Digest. DR. ROGER A. HARVEY, *is president of the American Cancer Society, and professor and head, Department of Radiology, University of Illinois College of Medicine.* DR. OWEN H. WANGENSTEEN *is Regent's professor and chairman emeritus, Department of Surgery, University of Minnesota Medical School.*

measured, but the long-term effects of welding the medical fraternity to the American Cancer Society programs of cancer control will be felt as long as this organization needs to continue its existence.

The extent of his medical leadership was vast enough to attract leaders of other health agencies, when the occasion arose to petition the President of the United States to accept a share of responsibility in opposing the health hazards of cigarette smoking.

Only a medical statesman of his merit could have guided the American Cancer Society in assuming the leadership in combatting the cigarette menace to the nation's health. This great accomplishment seems a fitting climax to the sequential career that he has successfully pursued.

This program to prevent thousands dying needlessly from the effects of cigarette smoking, which he has so vigorously promoted, is characteristic of Harold Diehl. As a young physician, he had always looked toward something better for mankind. It was ever his hope that medicine might grow beyond the scope of pills and remedies—to encompass the belief that sickness need not always occur. His advocacy of preventive medicine has been vindicated in the knowledge that lung cancer is in many instances a preventable disease.

His courage and tenacity in this area of preventive medicine have enabled the American Cancer Society to perform a service in cancer control unparalleled in its long history.

The American Cancer Society pays tribute to you, Dr. Diehl, for your prodigious service.

MR. LEWIS: *Next a word from the man who heads the staff of the American Cancer Society, Lane W. Adams, executive vice-president.*

## Mr. Adams

On his way to retirement an unusual thing happened to Dr. Harold S. Diehl. It seems that word got around that Harold was about to retire, and his host of friends and admirers wanted to express their warmth and appreciation for this fine man. So they began writing letters putting their feelings on paper.

Harold was at Cass Lake about that time, so the letters found their way to my desk. But they were all addressed to Harold. They arrived in such volume and were so beautifully expressed that we thought they deserved a special setting of their own. In fact, we didn't share any of them with Harold at that time. We waited until tonight so we could present him with all the mail that came in while he was away. The letters have been bound in a most attractive volume which I have here. I'd like to share with you the foreword of this heart-warming collection. It begins with a quotation from Ralph Waldo Emerson:

> The only reward of virtue is virtue; the only way to have a friend is to be one. . . . I do then with my friends as I do with my books. I would have them where I can find them, but I seldom use them.

If Emerson were alive today, he would be a friend of Harold Diehl. They share with each other a passionate loyalty, a fierce sincerity, a searching belief in goodness among friends. In this book are Harold Diehl's friends. He has them where he can find them—here in this collection of letters.

Each expression of friendship reflects a unique warmth and affection—some from past associations, some from the very vital present, many looking to the enthusiastic years ahead. Taken together they are the measure of a great physician, a brilliant medical school dean, a creative administrator, a practical idealist, a much beloved friend.

MR. LEWIS: *Now, from one of Harold's very close friends, a man who has done much for the American Cancer Society, senior editor of the* Reader's Digest, *James Monahan.*

## Mr. Monahan

I am confident that everyone here who knows Harold S. Diehl realizes that Dr. Diehl's retirement from his present post in the American Cancer Society is really the beginning of a new and exciting chapter in his long and distinguished career.

Better than anyone, Dr. Diehl knows that much remains to be done in the public health area of the cancer problem in which he has pioneered. Hence I think we can reasonably look to him to carry on—and to bring this great task nearer to completion.

Dr. Diehl is aware, for example, that there is need now for an authoritative book which will place in perspective the greatly ramified problem of cigarette smoking and disease—not only the medical and scientific aspects of the problem but the all-important social, psychological, industrial, and government aspects as well. Many of us hope that such a major work will get a high priority on Dr. Diehl's work schedule for the years ahead.

And, partly to this end, my wife and collaborator, Lois Mattox Miller, and I, with the hearty approval of the editors of the *Reader's Digest*, are donating to the archives of the American Cancer Society the documentary material which we have accumulated over the past fifteen years while working on the series of cigarette articles published in the *Digest*. We hope that Dr. Diehl will find these files helpful in some aspect of his future work.

But those remarks are gratuitous on my part and only incidental to the real reason for my being here this evening. The officers of the American Cancer Society—Dr. Diehl's devoted friends and longtime associates—have asked me to make the announcement of what we hope will be good and important news to all of you. Out of the Cancer Society's respect and friendship for Dr. Diehl, there will be established an annual *Harold S. Diehl Lectureship* sponsored by the American Cancer Society and we hope the American Public Health Association.

The annual lecturer will be chosen by a joint committee of the Cancer Society and the Public Health Association. The award probably will be a gold medal and an honorarium of perhaps a thousand dollars. The lecture probably will be delivered at the annual meeting of the American Public Health Association and the paper published in the journal of the association. While the details still must be worked out, it is expected that the lectures will deal with cancer prevention and control, with an accent on lung cancer attributable to cigarette smoking, and on the responsibilities of industry and government in dealing with the problem.

For this is an area where Dr. Diehl has worked with such distinction. While the decision must remain with the joint committee, some of us have the fervent hope that the first Harold S. Diehl Lecture will be given by Dr. Harold S. Diehl himself.

Because that, better than any protocol, would define the scope, set the pace, and establish the high standard which we hope will characterize the subsequent papers in the Harold S. Diehl Lectureship for many years to come. . . . . . Thank you.

MR. LEWIS: *People are always saying to me these days why is so much attention being given to the heart? Can't you in cancer transplant something? Does the heart association have to get all the publicity? Well, we have here today one of the very great surgeons of our time, a man from Minnesota who has been widely hailed as in fact the father of heart surgery. He also has made brilliant contributions to cancer research, cancer detection, and cancer surgery. On top of all that he is one of Harold Diehl's oldest and warmest friends. It's a pleasure for me to introduce a former director of our society, Owen H. Wangensteen.*

## Dr. Wangensteen

I FEEL A SPECIAL SENSE of privilege in being asked to speak on this occasion of our great hero, Harold Diehl. Memory is a sort of picture-book to whose pages we frequently turn to recall with pride and pleasure former times and scenes.

### THE EARLY YEARS AT MINNESOTA

Harold Diehl came to the University of Minnesota as a freshman medical student in 1914, after graduation from Gettysburg College (1912) and after having taught mathematics and coached athletics in a western New York State high school. After two years at Minnesota he was considering transferring to Harvard. Then, in midsummer, came a letter from one of his teachers offering him an assistantship at Minnesota for $300. This recognition was a temptation Harold could not resist. However, fate does not deal in trivialities. That fortuitous circumstance determined his future career. H. E. Robertson, professor of pathology, was the discerning teacher who recognized Harold's potentialities. We who profess to be teachers must ever be alert to the potentialities of students. We are still hearing today echoes of Dr. Robertson's words of encouragement, for they affected not Harold Diehl alone but are intertwined indelibly with Minnesota's medical school and the American Cancer Society. The teacher who succeeds in instilling a love and lust for learning in his students projects his influence to unborn generations.

"The purpose of universities," said Woodrow Wilson, "is to make our sons as much unlike their fathers as possible." I would rather point to the miracle of education through which it is possible for a youngster to make the most of talents perhaps unknown to him and to his associates. How many here tonight would recognize the youth you were before the catalysts of education, time, and associates made you what you now are? If our Harold of today and his former self in his early teens were to meet, they probably like most of us would pass without detectible signs of recognition.

From the manse or the parsonage come many men annually who build for themselves careers of great distinction. Perhaps the Ambassadors of the Lord, like Harold Diehl's father, are able to impress their progeny more effectively than most parents of the need and importance of getting on with life's work. Every man is a prince of possibilities. Only through dedicated and consecutive labor, however, can he rise to suggestions of sovereignty in his field of endeavor.

When Harold Diehl entered in 1914, Dr. George Edgar Vincent, our third university president, had been on the scene at Minnesota for three years and the impact of his leadership was stirring the campus.

It was Vincent who planted the germinal seed for the growth and conversion of a series of colleges of low tone into a true university with emphasis upon quality. Several key appointments, amongst whom was Elias Potter Lyon, Harold's immediate predecessor as dean, were the simple but important devices which provided the energy for the forward leap of the university on many fronts. Other important appointments of that period which left their impress upon the university's future development were Lotus D. Coffman, Guy Stanton Ford, and Walter C. Coffey, all of whom succeeded to the presidency of the university! To the medical school came Clarence M. Jackson, the great anatomist, from whose department emerged a sustained interest in research to which eventually most departments of the medical school capitulated.

### HIS YEARS AS DEAN

The halo of the success motif always hovered closely about Harold Diehl. He had an easy approach to his colleagues and a warm and perceptive appreciation of their good qualities. He is a man of infinite patience and good humor. Sound judgment and loyalty to the highest ideals of universities and great institutions motivated his actions. In his successive endeavors as student, professor, organizer, and director, he worked his way through quagmires of doubt, obstruction, and difficulty until light became visible at the far end of the tortuous way. In meetings of his administrative committee he always had an agenda—not always the most important items to come before the faculty—but it gave members a chance to talk and discuss while he sat back and listened. Such sessions were a compass to give him confidence, orientation, and direction. He managed his faculty in such a manner that there were rarely dissident voices even though differences could not always be resolved. He succeeded with a faculty about as well as anyone in the game. He encouraged research. He wanted a distinguished faculty which in turn would influence students.

In a speech to the university's medical faculty, approximately thirty-five years ago, A. J. Carlson, famed physiologist of the University of Chicago said: "I don't look up to Deans, I don't look down at dem; I just look at dem." Obviously Dr. Carlson had been exposed to bad deans. I would wager that Diehl's faculty would echo an enthusiastic endorsement of Harold Diehl as a truly great dean. Together with his predecessor, Dr. Elias Potter Lyon,* and a young faculty, Diehl lifted an institution, sleeping peacefully in complacent mediocrity, out of its slumbers to make a durable impress upon the current medical scene, an enterprise to which Harold's successor, Dean Robert Howard, is lending added impetus in a far more complex setting.

Harold had a unique manner of saying No. He would conclude a discussion not infrequently by saying, "Let us think about it." When you went back to reopen the issue, he would often say: "Let us think about it some more." Eventually you came to realize he wanted to agree with you, but for some reason, found it necessary to put you off. This manner of saying No indicated that in any case he was willing to listen.

We were a young group at Minnesota thirty-five to forty years ago, operating essentially without the stricturing influence of ground rules other than gentlemen's agreements. Presidents Coffman and Morrill frequently employed a phrase that was on the lips of many of us in those days: When you find a good man, grab on to him and start him on a shoestring if necessary; somehow or another support money can be found.† In all such matters Harold Diehl supported his staff warmly.

At budget time I would go to Dean Diehl with a small sheet of paper held in the palm of my hand outlining proposed changes. He would almost invariably nod his head in approval. I recall only one instance in which Harold raised a question. It concerned the promotion of C.

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*At his own Retirement Dinner in the early thirties, Dr. Lyon said the greatest dean he knew was Gunga Din, Kipling's Regimental Water Carrier.

†I am delighted to see Mr. J. L. Morrill in the audience who was university president during many years of Dr. Diehl's deanship. On one occasion, a president of one of our neighboring state universities came to consult with President Morrill and a small group from the medical school to learn how best to bring its medical school out of the doldrums, on which occasion, the shoestring phrase popped into the discussion several times.

Walton Lillehei directly from instructor to associate professor with tenure. June 1, 1950, my colleagues and I had operated upon Walt for a lymphosarcoma, extensions of which were found in the upper mediastinum. Because of the poor prognosis outlined by experts, I felt Walt should have the protection of university tenure for his family. Within the hour Dean Diehl called me back, informing me it was quite proper to skip the rank of assistant professor. Dr. Lillehei's work obviously had already begun to project its future promise and make an indelible and significant impress upon surgery everywhere.

We had few committees those days at Minnesota. Harold appointed Ad Hoc groups to advise on matters of importance. Obviously we had more energy, enthusiasm, and earnestness than sophistication.

Today we are living through an era in which the innovator is often under suspicion, being second guessed by self-appointed arbiters more versed in the art of criticism than in the subject under scrutiny. We need to take care lest the wells of creativity and the spring of the mind of those who break with precedent become manacled by well intentioned but meddlesome intruders.

*The New Yorker* occasionally piques its readers' imaginations with pictures of incongruous persons cast up on desert isles. I think it would be far more appropriate to assess who would be your best companion in the subway during a power failure or in a bomb shelter. All who know Harold Diehl well would acclaim him, I feel certain, as a good companion for such a contingency. He is never dull and can adapt himself to any audience and regale his listeners with an unending series of stories reminiscent of the Arabian Nights Reader.

Harold is a person with whom one readily gets behind the scenes. He is resourceful, an excellent leader, and a pleasant companion whether the weather is fair or inclement. At Minnesota, students occasionally complained that they never saw the dean. In fact, one day I heard a student remark: "Dean Diehl is like the Holy Ghost. We all know he is around but we never expect to see him."

Harold has a record of distinction in a number of successive tasks as student of microbiology, hospital pathologist, director of student health services, and member of the National Defense Council and the War Manpower Commission in World War II; at Minnesota he will always be remembered as a great medical school dean and architect of both faculty and buildings. Emblazoned upon a building very important in the life of Minnesota is the name Diehl Hall. It is a virtual labyrinthine maze of research laboratories and the home, too, of our burgeoning medical library through whose turnstiles half a million visitors pass a year. It is a place where students and faculty have the opportunity to gain and review acquaintance with great books, the best of all teachers. Now for the past ten years Harold has been the versatile and distinguished servant of the American Cancer Society in the role of adviser and activist of research. All this spells out a very impressive career as versatile and illustrious public servant.

### YEARS AT THE AMERICAN CANCER SOCIETY

It would be impossible to speak of Harold Diehls' contributions to the work of the Cancer Society without saying a few words about that remarkable institution. "Great accomplishment," Emerson wrote, "is never achieved without enthusiasm," and the enthusiasm which the board of directors and staff have lent the work of the American Cancer Society during its fifty-five years of existence is incalculable. The society has kept hope alive amongst patients afflicted with cancer, often when physicians have tried to conceal from the patient the nature of the illness because of a sense of futility. The society has done a great service in making the American public cancer-conscious. It has been a means of disseminating information concerning what the profession of medicine can do for cancer. It has emphasized especially the 7 common warning signs of cancer.

It is important that we look back as well as forward. To have no concern for history is tantamount to having a physician with total amnesia. A look at the record indicates quite conclusively that the greatest achievement in cancer to date has been early detection. Papanicolaou has made a greater impress upon the cancer problem than any person of this or previous generations. The mortality from cancer of the cervix, which decades ago took more lives than any other cancer among females, has been reduced by more than 50% in consequence of Papanicolaou's work. From available evidence, it would appear that similar effective reductions in mortality can be achieved by like means for both cancer of the breast and rectum. We must not be content until deaths from cancer of the cervix have reached the vanishing point—and so it can be too for cancer of the breast and rectum with well directed consecutive efforts at detection.

Leonardo da Vinci said once, "The greatest tragedy which could befall a people is when their knowledge outstrips their performance."

I feel the time is overripe for the American Cancer Society to join with other cancer-oriented groups and organized medicine to establish centers throughout our land where patients may be examined annually with a view to these frequent cancer killers. Difficult? Yes. But what is difficulty but the nurse of accomplishment? I make no apology for failure to disguise my enthusiasm for the promise of this agency in this distinguished company.

Over all the prophets of difficulty and the din of doubting Thomases we need to be alert to the historic advice of John Hunter to Jenner: "Don't think; try the experiment." It is to basic research, upon the nature and prevention of cancer, to which we must look for a more definitive solution of the cancer problem. The valiant struggle under wise guidance from Harold Diehl and other counsellors of our society against the menace of smoking from cancer, emphysema, and heart disease shows how difficult it is to separate man from his own transgressions.

### RETIREMENT

When Al Blalock, famed blue-baby surgeon at the Hopkins, retired in 1964, he said on the occasion of the farewell dinner that he would provide a dog in the department of surgery so that someone there would recognize him after he joined the unemployed! When Sally and I had been married somewhat less than a year I asked her how she found marriage. She promptly replied, "Not half as bad as I thought it would be." We are just beginning to experience the disengagement of retirement and from the vantage point of only a few months, I believe I can say for both of us it is not half as bad as either of us thought it would be. Amongst the wives of the retiring faculty at the University of Minnesota there is a saying, "I took my husband for better or worse but not for lunch!" Harold, you will never need to provide a mascot dog for yourself at the cancer society, and Julia, as long as Harold has an office and is a member of a club, the fear of retired Minnesota faculty wives, I am certain, need never trouble you.

But is Harold ready for the disengagement of retirement? I am inclined to think not. He loves the chase and I am certain he knows there is still a stone or two to be added to his jeweled crown. Morgagni summarized his life's work, still read today, in 5 volumes at the age of 79, then lived another ten years! No, I don't believe that Harold is ready to give up work. It gives him too much pleasure. Many of us, like old hens, continue to lay eggs, for we know of nothing which gives us greater pleasure.

We are met here to express to Harold Diehl our appreciation for his ten years of devoted and fruitful labor in our common interest of thwarting the ravages of cancer. We are met also to tell Harold and his lovely Julia of our unbounded admiration and warm affection for them. Julia, the medical school faculty has missed those marvelous garden parties at your home at 40 Barton Avenue, S.E., and your charming wintertime dinners. How you worried if your guests could make their way up to your doorstep over slippery ice and snow! Your gracious hospitality, your recipes, including Harold's famous punch, are legendary on the campus as is the warm and friendly atmosphere you created for visiting scientists and their wives.

In the Christmas mail I received a poem from one of my patients of thirty years ago, who too had suffered from cancer.* It expresses a sentiment which we all feel, I am certain, for Harold and Julia Diehl.

Their later years, freed from the whirl of things
With time for meditation, time to think
About the gift of life and all it brings
Of pain and pleasure grief and ecstasy
How full of praise and song I'll surely be
Thinking of what my Friends have meant to me!

For your fruitful labors Harold and for what you have meant to us, Harold and Julia, and for your friendship, we are grateful and appreciative. As you sail the seas of the future together, our best wishes go with you always.

## Response by Dr. Diehl

Mr. Lewis, former speakers, and other friends who have passed up the fabulous attractions of New York City to be here this evening.

To all of you I want to say first that I never dreamed that we would ever find such warm, personal friendship in a big, national organization or in this biggest, most impersonal city in the world.

Next I want to say a number of "thank yous." And I will start by thanking you for recognizing the important role that Julia has played in everything that I may have accomplished both at the

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*Miss Helen Griffith erstwhile professor of English literature at Mount Holyoke College is the author of this charming verse (portion of a longer poem), which precipitated a chain reaction among her friends, the poem being sent on successively to a number of persons. It reached me through a former patient and warm friend, Mrs. J. Frank Fraser and with the help of Mrs. John Bean and Mrs. Roger I. Lee, I was able to trace its origin to its author, who has kindly given permission to cite it in this tribute to Harold and Julia Diehl.

University of Minnesota and with the American Cancer Society. Speaking of this reminds me of a remark by Dr. Harry Emerson Fosdick at a dinner at Riverside Church honoring him on his 80th birthday. He mentioned Mrs. Fosdick's contributions to his career and said that the night before he thought of the answer to a question that had been troubling him for a long time. The question was, "Why do so relatively few women in comparison to men attain distinction in the various fields of human endeavor, whether these be in art, in music, in literature, in science, in the professions, or in public life?" Women, he said, are smarter than men, more imaginative, more determined, and more dedicated and work harder than men. Why then do so few of them attain distinction? The answer, he said, is that *no woman ever had a wife*.

Next, I want to thank Lois and Jim Monahan and the *Reader's Digest* for giving their files on the smoking problem to the cancer society. These unique files which have been assembled over many years will be an invaluable addition to the society's reference library on this important topic. In carrying out Mr. Monahan's suggestion that I write a book on this subject, I am sure that I will make a great deal of use of them.

Next, about the lectureship that Mr. Monahan announced. I am overwhelmed by it, but I am also embarrassed because many people have done more in cancer control and on the smoking problem than I have. There is, of course, nothing for me to do but to accept this honor. The only basis, however, upon which I can do so is not as an individual but as a representative of the American Cancer Society which has pioneered in establishing the relationship of smoking to cancer and other diseases and then in informing the public about the health hazards of smoking. In this the cancer society has always had the cooperation and support of the *Reader's Digest*. In this spirit I accept the honor and say thank you.

As to the book of letters, maybe I shouldn't say anything until I have read them. I am going to do so, however, because I am sure they contain many expressions of friendship, goodwill, and affection. For these I thank you. Reading and rereading them will cheer me up when I get discouraged. Incidentally, I have looked forward upon my retirement to reading some good fiction. Possibly this book will satisfy that desire for a long time to come.

Next about the kind and heartwarming remarks of Mr. Lewis, Mr. Adams, Dr. Harvey, and Dr. Wangensteen. They are overly generous. I just wish that I could feel that they are really deserved. Even so it is nice to hear them. And since I have heard that praise won't hurt you if you don't inhale, I don't think you need worry about their doing me any harm.

Having said these "thank yous," maybe I should sit down. Maybe I should take a cue from the bridegroom who when asked after his wedding if there wasn't something he would like to say, replied, "No, I'm afraid I have said too much already."

Possibly it would be well for me to follow his example but there are a few things that I would like to say. To make sure that I won't forget them and that they will be as brief as possible I have written them down.

Before I turn to my notes, however, Dr. Wangensteen's comments about how I said "No" when I was a dean reminds me of the man who was having a conference with a dean. The secretary knocked and said to the dean I do not like to disturb you but Professor X says he must speak to you immediately on the phone about a very important decision. The dean took up the phone and after listening a bit said "No," then again "No," then "Yes, oh yes," then after several more "Nos" he hung up the phone. His guest then asked, "I am curious to know what you said "Yes" to. The dean replied, "He asked if I could hear him."

Now to my notes:

When Lane Adams asked me a couple months ago to put a circle around the evening of January 18th, I said that I would be glad to do so but asked why. When he explained the purpose, I demurred as vigorously as possible. His reply was that this was not a decision for me to make. Frankly, I am glad he did, for now that we are here it is thrilling for Julia and for me to meet with so many wonderful friends, most of whom we never would have known had it not been for the American Cancer Society.

Now if you will permit a senior citizen to reminisce a bit I think you might be interested to know how Julia and I happened to leave the University of Minnesota and the friends and the home that we loved in Minneapolis and move to New York to join the staff of the Cancer Society. The first intimation of an invitation to do so came from Dr. Coggeshall. It was a Saturday morning in late April. Julia and I were working on the flower beds in our backyard when the phone rang. It was Coggy on the line. He said that he was calling unofficially to tell me that I would be approached about a position on the national staff of the American Cancer Society, a new position that he felt would offer an opportunity for another worthwhile career. I replied that I was honored and flattered but that our roots were deep in Minnesota and I had several rewarding years ahead before I reached the university's retirement age. He said that he was aware of all this and that he was not going to argue with me about it but that he wanted me to promise him just one thing: that I would not say "No" without investigating it. I said that I would be glad to agree to that. He then said that he would like to talk with Julia. He told her the same story and asked her not to let me turn it down without looking into it.

Several weeks later "Dave" Wood, the president of the society, came to Minneapolis and spent a couple of days with us getting acquainted and talking about the ACS. Next, Julia and I came to New York for the AMA meeting where we attended Elmer Bobst's Silver Slipper party with Gene Pendergrass, Al Popma, Harry Nelson, and several other ACS officers. On the same trip we spent a Sunday with Janet and Meff Runyon at their home in Weston, visited the ACS offices, and met some members of the staff. The end result is the gathering here this evening.

As some of you know, my position with the society has been essentially that of a consultant and coordinator—not an administrator. I have had no budgets nor personnel problems. I had plenty of those for a third of a century at the University of Minnesota. At the ACS my only staff has been a secretary—fortunately a very good and a very loyal one.

When I joined the staff I wondered just how and where I would fit in. But not for long. In fact, before I really knew my way around, Mr. Runyon dropped on my desk an urgent problem. It was krebiozen. Dr. Ivy had requested that the society test krebiozen, according to ground rules that he prescribed. That assignment kept me busy for some time and resulted in the forthright statement—the so-called ACS white paper on krebiozen—published first in the *Journal of the American Medical Association* and then in the public press. Some of you may remember our being picketed for the position we had taken. The final verdict on this controversial cancer treatment is familiar to you all.

My efforts next were centered primarily on breast cancer and, in cooperation with Dr. Papanicolaou, in the promotion of the use of the "Pap" test for cervical cancer. It was my privilege also as senior medical and scientific adviser to cooperate with Pat McGrady, Clif Read, and others in the development of the society's renowned Science Writers Seminar.

I have also appreciated the honor and the pleasure of serving as the society's liaison with organizations such as the American Medical Association; the United States Public Health Service; the Food and Drug Administration; the Association of American Medical Colleges; the American College Health Association; the American Public Health Association; the National Interagency Council on Smoking and Health, and others.

Then in recent years, as you know, my efforts have been focused primarily on the problem of cigarette smoking. This began when the board of directors established a special committee on tobacco and cancer and Mr. Runyon asked me to coordinate the society's activities and programs on this subject. This has been a difficult but a challenging assignment. How could it be otherwise than challenging when cigarette smoking is the major known cause of cancer deaths; and how other than difficult when it involves changing a widespread and accepted social habit and is opposed by the most powerful forces ever mobilized against efforts to reduce a public health hazard.

Illustrative of the society's involvement in this area are the following facts: The society's distinguished president, Dr. Alton Ochsner, was one of the first to speak out forcefully about clinical observations concerning the relation of cigarette smoking to lung cancer. The society conducted, under Dr. Hammond's leadership and direction, the first major study that firmly established and defined the relation of smoking to cancer and other diseases. The society than conducted a campaign to inform the public of the health hazards of smoking. The society played a leadership role in the establishment of the Surgeon General's Advisory Committee on Smoking and Health, in inaugurating and producing the Medical Bulletin on Tobacco; in the development of the National Interagency Council on Smoking and Health; in the Federal Trade Commission's action relative to tar and nicotine; and in the development and conduct of the World Conference on Smoking and Health. The results of these efforts have not been dramatic but, looking back over the past ten years, we have made progress.

Now, a few words about the American Cancer Society as I see it. I am immensely proud of the society's splendid organization, of its superb achievements, and particularly of its crusading spirit.

We—and by we I mean volunteers and staff—have crusaded to inform and to educate the public about cancer. We have crusaded against cancer quackery. We have crusaded for the support of cancer research both by the society and by the federal government. We have crusaded for the utilization of the Pap smear. We have crusaded for breast self-examination and for the better treatment of breast cancer. We are crusading for the widespread use of proctosigmoidoscopic examinations to reduce the tragic and unnecessary toll of cancer of the colon and rectum. We are crusading for the better treatment of leukemia. And we are crusading against the health hazards of cigarette smoking.

This crusading, particularly against cigarette smoking, takes courage. It arouses criticism from certain groups. But it also wins the respect and the support of the public. It is the spirit and this type of activity that are the primary challenge and justification for voluntary health organizations.

During my years with the American Cancer Society, its organization, its efficiency, and its support by the public have increased tremendously. I can say this because I have contributed little or nothing to it. We can and should be proud of this.

In the years ahead this must continue but I urge you to continue also the society's crusading spirit—crusading not alone for funds but crusading also to control cancer.

It is pleasant and comfortable to cruise peacefully on an excellent, well managed ship in calm inland waterways. But if one wishes to go places and to accomplish things, it is necessary to get out into the open seas, where the going may be rough and at times hazardous.

Yet, this is what I hope that the American Cancer Society will continue to do, even in the difficult area of cigarette smoking. The going will be rough, probably even rougher than in the past. Tobacco industry spokesmen keep repeating that "there is no scientific proof that cigarette smoking causes human disease, or in any way impairs human health." They say that the reason we talk about cigarette smoking is to keep ourselves before the public so that we can raise more money. They suggest that the American Cancer Society should be renamed the Anti-Cigarette Society. They accuse us of having taken on "a prohibitionist tinge" and of trying to undermine individual freedoms. I just hope that the society will not be deterred by these or by other tactics still to come.

I am confident that you will not be deterred and in the future as in the past a crusading spirit will be the ear-mark of the American Cancer Society.

In conclusion, and in a different vein, I would like to share with you an Oldster's Prayer sent me by my brother when he heard that I was about to retire and to become a consultant to the society. It is:

> Lord Thou knowest better than I know myself that I am growing older and will some day be very old.
>
> Keep me from the fatal habit of thinking I must say something on every subject and on every occasion. . . . Release me from craving to straighten out everybody's affairs. Make me thoughtful but not moody; helpful but not bossy. With my vast store of wisdom, it seems a pity not to use it all, but Lord Thou knowest, I do want a few friends at the end.
>
> I dare not ask for improved memory, but rather for a growing humility and a lesser cocksureness when my own memory seems to clash with the memories of others; and do teach me the glorious lesson that occasionally it is possible I may be mistaken.
>
> And above all keep me reasonably sweet; I do not want to be a Saint—some of them are so hard to live with—but a sour old cuss is one of the crowning works of the devil. And do grant me the ability to see the good things in unexpected places and the talents in unexpected people. . . . And give me the grace and sportsmanship to tell them so. And Thanks Lord.
>
> AMEN

As a postscript to this prayer, I must add that I am a bit troubled about being a consultant, for I have always understood that a consultant is expected to give advice—and I remember a small boy's essay about Socrates. He wrote "Socrates was a Greek. He went around giving advice. They poisoned him."

Finally, Julia and I again thank you for giving us the privilege and honor of working with the American Cancer Society for the past ten years. These have been wonderful years and this a never-to-be-forgotten evening.

# *Section on* PAIN *and* DISTRESS

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## *What Is Pain Exactly?*

Commonly used tests for pain are here considered inadequate for accurate information. Relatively new electronic techniques applied to the pain paths of peripheral nerves and the spinal cord give rise to evidence that helps to better understand how pain is felt. There is a difference in the action of anesthetics, narcotics, and tranquilizers that can be measured so that quantitative evaluation of such drugs may be made.

J. S. LUNDY, M.D.

# Physiological Standardization of Analgesics and Anesthetics

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Cleveland

TRADITIONAL METHODS for testing analgesics and anesthetics have remained empirical despite considerable new techniques in neurophysiology. The standard test used by the federal government to determine relative strength of narcotics has involved observation of the behavioral response, that is, withdrawal of a rat's paw from a hot plate or flick of the rat's tail from applied heat, following administration of the drug in question. It is indeed remarkable that this rather subjective test remains a means of evaluation and comparison of drugs and is the basis for our common clinical statement that morphine is ten times as potent as meperidine hydrochloride. In contrast, an electrophysiological model, first described by Collins and Randt[1-3] and more recently investigated extensively in our laboratory,[4,5] offers the potential for a more accurate, quantitative evaluation of drug effects.

Current concepts of pain transmission by Noordenbos,[6] Collins and associates,[7] Melzack and Wall,[8] and Shealy[4] place increased emphasis on three factors:

1] Smaller peripheral nerve fibers (gamma, delta, and C) have been found to conduct impulses generated by painful stimuli although these fibers are also concerned with other sensations. The intensity of the response is related to strength of stimulation.[9]

2] The larger peripheral sensory fibers, which are known to transmit touch and proprioception, do not transmit pain; in fact, recent studies[5,8,10] have shown that activity in large sensory fibers may inhibit a subsequent response elicited by the smallest fibers.

3] The most significant aspect of central pain physiology is that painful impulses provoke a

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prolonged after-discharge, the duration and quantity being related to the intensity of stimulation.[4,11]

We have found that a prolonged small fiber after-discharge (P.S.A.D.) (Fig. 1) of centrally located cells is elicited by electrical activation of smaller fibers in peripheral nerve, high-voltage electrical stimulation of the skin, pinching, heat, or injection of noxious chemicals. This response can be recorded in the propriospinal tract at all levels of the spinal cord, in the medulla, and in the tegmentum. Although brief evoked after-discharges result from such nonpainful stimuli as touch, vibration, hair rubbing, limb movement, and low-voltage electrical stimuli, no significant after-discharge (that is, none greater than 200 msec.) has been noted from stimuli which are known to be nonpainful in man.[4]

The discreteness of the recording foci and many other characteristic features of P.S.A.D. previously reported[1–4] have led us to consider its use as a possible means for evaluating the potency of analgesic and anesthetic drugs. We have also employed an envelope detector (pseudo-integrator) to summate the total time area of the after-discharge and, therefore, permit quantitation of drug effects on P.S.A.D. Since the posterolateral ventral nucleus of the thalamus has no known pain-induced physiologic projection,[2] it was used as a control for the large fiber and rapidly conducting posterior column–medial lemniscal system and to demonstrate the integrity of the central nervous system.

Fifty adult mongrel cats weighing from 2 to 5 kg. were used and prepared in the manner standard for our laboratory, as described in a previous paper.[4] Stimuli consisted of touch, vibration, joint movement, pin, pinching, the heat of a soldering iron, single electrical stimuli to superficial radial or saphenous nerve, or trains of stimuli to the same nerves.

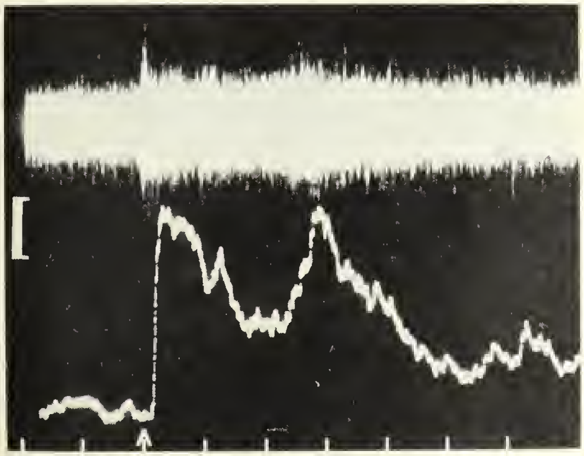

Fig. 1. Typical prolonged small fiber after-discharge recorded in right tegmentum. Electrical stimulus to left sural nerve at arrow, 40 volts, 0.5 msec. pulses, 200 pulses per second, 500 msec. train. Vertical gain marker, 100 microvolts; time markers, 0.5 second. Top line is the actual recording; bottom trace is integrated response.

This experiment was begun with the intent of evaluating the effects of phencyclidine, droperidol, and fentanyl citrate which were tested extensively.* Because of the results, preliminary experiments were done with a number of other drugs: thiamylal sodium, gallamine triethiodide, methohexital, mephentermine sulfate, codeine, levorphanol tartrate, morphine, meperidine hydrochloride, oxymorphone hydrochloride, fentanyl citrate, droperidol, hydroxydione sodium, chlorprothixene, prochlorperazine, strychnine, picrotoxin, diphenylhydantoin sodium, d-tubocurarine, halothane, and cyclopropane. Drug dosages were approximated from standard clinical dosages and all drugs were introduced intravenously with blood pressure monitoring.

In all instances, the effects of drugs were allowed to wear off with recovery of base-line P.S.A.D. to be certain that the system was intact.

All brains were sectioned and examined histologically to ascertain proper localization of recording electrodes.

## RESULTS

Phencyclidine (0.5 to 2 mg. per kilogram), an intravenous anesthetic agent, in dose-dependent fashion, increased the height of the thalamic single stimulus response (Fig. 2) and abolished P.S.A.D. (Fig. 3) in 12 animals. In addition, phencyclidine (2 mg. per kilogram) abolished P.S.A.D. in response to pinch and to burning and also abolished the usual increase in blood pressure and pupillary dilatation with painful stimuli. Thus, all criteria seem satisfied to consider this drug an anesthetic in cats. Recovery of P.S.A.D. and pupillary and blood responses begins in one hour but may not be complete for three to four hours. All 12 animals responded similarly.

Similarly, in dose-dependent fashion, droperidol and fentanyl citrate (fentanyl, a narcotic, 2 mg. per kilogram per cubic centimeter, and droperidol, a potent tranquilizer, 0.4 mg. per cubic centimeter), increased the height of the thalamic single stimulus response and abolished P.S.A.D. in 15 animals. The maximum effect on both responses was obtained at 0.2 cc. per kilogram. At this dosage, there was greater than a 50% decrease in height of the tegmental after-discharge, whereas dosages below 0.1 cc. per kilogram pro-

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*Phencyclidine (Sernylan®) supplied by Parke-Davis Co.; droperidol and fentanyl citrate (Innovar-vet®) supplied by McNeil Laboratories

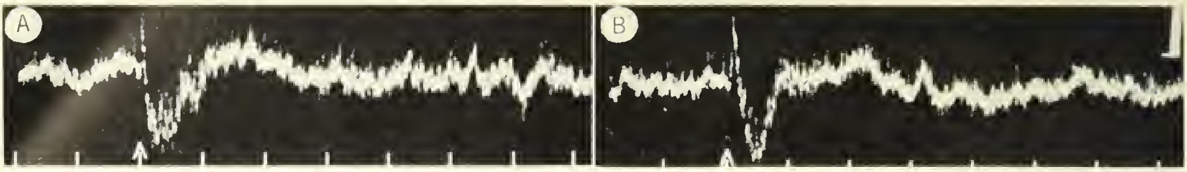

Fig. 2. Thalamic response to single stimulus of left sural nerve at arrow, 40 volts, 0.5 msec.; time markers equal 50 msec. Note that this is a response to single stimulation and not to repetitive stimuli. [A] Before intravenous phencyclidine, 1 mg. per kilogram. Vertical gain marker equals 50 microvolts. [B] Ten minutes after intravenous phencyclidine. Vertical gain marker equals 50 microvolts.

duced no change in the tegmental response and only slight amplification of the thalamic response. No exception was seen in the 15 animals. In testing the components of droperidol and fentanyl citrate separately it was found that droperidol was mainly responsible for amplification of the single stimulus response in the thalamus and depression of P.S.A.D. Fentanyl citrate, in dosages up to 0.4 mg. per kilogram, caused no significant change in single stimulus response or in P.S.A.D. Halothane (1%) and cyclopropane abolish P.S.A.D. with little effect upon the thalamic response.

A less intense investigation of other drugs was done, each used in 2 to 5 experiments. Among the narcotics, morphine had no significant effect upon the thalamus but decreased P.S.A.D. at large dosages (3 mg. per kilogram). Fentanyl citrate, in large dosages (1 mg. per kilogram) caused a small (25 to 50%) increase in the thalamic response and a decrease in P.S.A.D. In large dosages (3 to 5 mg. per kilogram), meperidine hydrochloride also enhanced the thalamic response 30 to 200% and decreased P.S.A.D. Levorphanol tartrate, 0.2 mg. per kilogram, and codeine, 3 mg. per kilogram, had similar effects. Oxymorphone hydrochloride was the only narcotic which abolished P.S.A.D. in dosages comparable to those used in man (0.01 mg. per kilogram).

Thiamylal sodium and pentobarbital sodium both abolish P.S.A.D. and enhance thalamic and tegmental single stimulus responses; these effects last up to four hours. Methohexital's (2 to 5 mg. per kilogram) depressant effect is less than fifteen minutes.

Although fairly large dosages of the tranquilizers hydroxydione sodium, chlorprothixene, and prochlorperazine were required, the responses to their injection were similar to those of droperidol, which led to a 25 to 400% increase in the thalamic single stimulus response and a decrease in P.S.A.D. Similarly, D-tubocurarine and gallamine triethiodide, curare-like compounds, had no effect upon the thalamic responses or on P.S.A.D.

Mephentermine sulfate, a vasopressor, in dosages sufficient to double blood pressure (1 mg. per kilogram), had no effect on either system.

Strychnine is the only drug to date which has increased P.S.A.D. After 0.1 mg. per kilogram of strychnine, there is a moderate increase in spontaneous firing and elicited P.S.A.D. is considerably enhanced. Picrotoxin (0.1 mg. per kilogram), on the other hand, leads to such intense

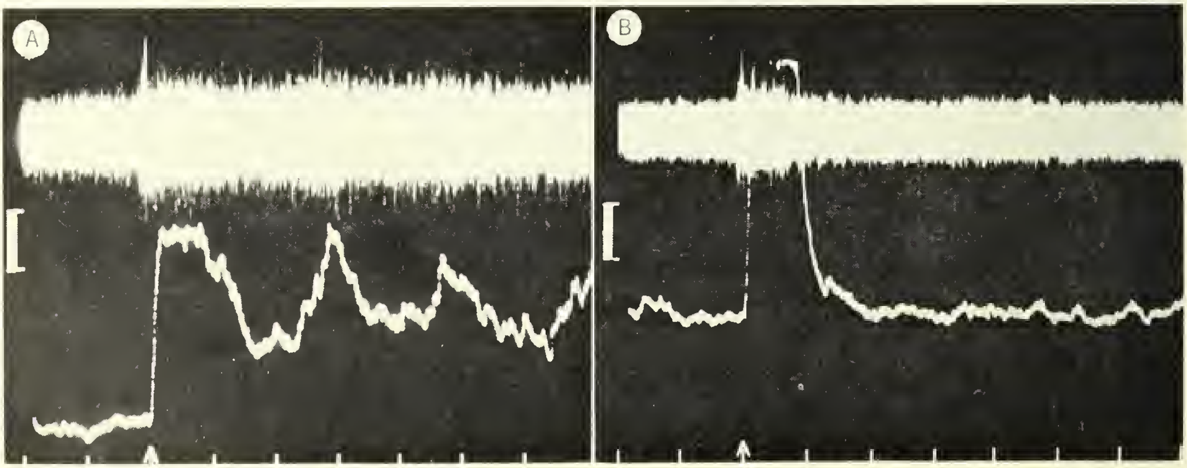

Fig. 3. Recordings similar to Figure 1. [A] Before intravenous phencyclidine, 1 mg. per kilogram. [B] Ten minutes after intravenous phencyclidine, 1 mg. per kilogram. Vertical gain marker equals 100 microvolts. Time marker equals 0.5 seconds.

spontaneous repetitive firing with a fairly regular rhythm that no additional firing occurs upon appropriate stimulation. Thus, it appears to induce a maximal spontaneous firing of the units involved.

## DISCUSSION

It has been shown by Wall[10] and Poggio and Mountcastle[9] and also in our laboratory[5] that large-fiber or nonpainful input may inhibit small fiber noxious input. An enhancement of conduction in, or summation of effects by, large fibers then might help to inhibit pain.

Theoretically, we might expect that ideal anesthetic agents would increase the thalamic single response and abolish P.S.A.D. This was found to be true in the case of phencyclidine and droperidol and fentanyl citrate where drug dosages sufficient to produce greater than 50% amplification of the thalamic single response resulted in an increasingly greater depression of the tegmental after-discharge. Only slight analgesia in clinical tests was noted at low dosage and it is, therefore, most likely that clinical anesthesia is obtained at values of P.S.A.D. depression greater than 50%. This was particularly well shown with phencyclidine in the combined physiological experiments with comparison of P.S.A.D., blood pressure, and pupillary reaction. The concomitant abolishment of all these parameters of reaction to pain strongly suggests that pain is inhibited at the time that P.S.A.D. is significantly diminished.

Strychnine, which blocks postsynaptic inhibition,[12,13] is the only drug which has increased P.S.A.D. This suggests that postsynaptic inhibition, possibly that imposed by large fibers at Melzack and Wall's "gate,"[8] has been normally suppressing the input; when this normal inhibition is removed, much greater central reaction ensues. Picrotoxin, known to block presynaptic inhibition (the most potent natural inhibition), elicits a maximal spontaneous discharge. Thus, P.S.A.D. cells appear capable of continuous firing unless depressed by normal levels of inhibition. Since Wall has demonstrated pre-synaptic hyperpolarization as a significant role for "C" fibers it would be interesting to know whether the picrotoxin effect alters presynaptic hyperpolarization or presynaptic inhibition.

Narcotics commonly depress pain without producing analgesia and they should at least decrease P.S.A.D.; they may accomplish this partially by increasing the large fiber input (thalamic response). It is interesting that fentanyl citrate, meperidine hydrochloride, levorphanol tartrate, and codeine tended to increase the thalamic discharge, but other narcotics such as oxymorphone hydrochloride and morphine only abolished P.S.A.D. without enhancing the thalamic potential. Of course, narcotics are notoriously ineffective in cats and their depressive effects upon P.S.A.D. were seen only at very high dosages except with oxymorphone hydrochloride.

Since tranquilizers are known clinically to enhance the effects of narcotics and raise the pain threshold, they might be expected to increase the large fiber response. This was prominent with droperidol, hydroxydione sodium, chlorprothixene, and prochlorperazine. All these drugs tended to depress P.S.A.D. without abolishing it.

Barbiturates, as might be expected from their known synaptic depressive effects even at the motoneuronal level,[14] abolish the multisynaptic prolonged small fiber after-discharge in low dosages. The widespread synaptic depression characteristic of barbiturates makes them the exception in our investigation. Again, this may represent a unique effect of barbiturates or may simply be an idiosyncrasy of cats.

As far as we can determine, the only significant central nervous system electrophysiological studies of anesthetic agents are those of Davis and associates.[15] Their evaluations were limited to effects upon the single stimulus evoked potentials of thalamus and midbrain and did not include effects upon prolonged small fiber after-discharge. In light of recent evidence,[4] it seems essential that drug studies include this latter parameter. The results of our experiments suggest that the relative potencies of anesthetic and analgetic drugs can be compared by evaluating the responses of the large fiber thalamic and small fiber prolonged after-discharge (P.S.A.D.) systems. The dose dependence of P.S.A.D. suppression and of thalamic single stimulus response enhancement is encouraging in our efforts to evaluate drugs in this more objective quantitative fashion. On the other hand, confidence in such a test method can be gained only by an even larger series of drugs evaluated both in cats and, particularly, in monkeys. The use of small graded dosages over extended trials should help clarify the relationship between large and small fiber activity, P.S.A.D., and analgesia. Clinical evaluation of each drug must be correlated with physiologic experiments.

In conclusion, our experiments suggest that drugs which totally abolish P.S.A.D. elicited electrically and mechanically should have analgetic effects. A significant reason for the decrease in P.S.A.D. by various drugs may well be interference with polysynaptic pathways. Certainly, the small fiber pathway which mediates P.S.A.D.

is a polysynaptic one, and these same drugs may have similar effects on other polysynaptic pathways. From physiological studies reported in previous work,[4] P.S.A.D. is known to be a response evoked only by painful stimuli.

These studies could best be standardized in animals having chronically implanted electrodes which allows repeated testing with a variety of drugs and comparisons of physiological results with clinical observations.

## SUMMARY

Physiological systems composed of the large fiber (nonpainful impulse) thalamic response and the small fiber pain-induced tegmental or medullary prolonged after-discharge (P.S.A.D.) have been used for evaluation of a variety of drugs. Anesthetic agents, narcotics, and, to some extent, tranquilizers and barbiturates, all have a significant dose-dependent effect upon these two evoked potentials. Anesthetics routinely abolish P.S.A.D. and usually enhance the thalamic response; narcotics depress P.S.A.D. and may enhance thalamic potentials; tranquilizers abolish or diminish P.S.A.D. and intensify thalamic response.

This system may be capable of standardization to allow quantitative evaluation of such drugs.

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Supported by NIH grant NB-00779 and the Adolf Gundersen Medical Foundation

This paper was presented in part at the meeting of the American Association of Anatomists, San Francisco, California, April 1966.

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# Annie Laurie Baker

FRANCES E. FLYNN, A.C.S.W.

St. Paul

It has been my good fortune to know Annie Laurie Baker and work with her professionally since 1938. What originated primarily as professional respect developed during the years into a warm friendship which I felt privileged to share. It, therefore, is with personal pleasure and professional pride that I prepare a record of the highlights of her career and some of the factors which contributed to her success.

Annie Laurie is the daughter of the late Grenville W. and Annie MacMillan Baker. Mr. Baker was a native of Minnesota. He attended Hamline University and later was associated in a Minneapolis law practice with Walter Stevens. From there he moved to North Dakota to practice and ultimately returned to St. Paul as an associate of the Aetna Insurance Company. His wife was born in Canada and came to St. Paul as a child. She was graduated from Mrs. Backus' Finishing School for Girls and attended the University of Minnesota. Of this union, in addition to Annie Laurie, were born William, Alexandria, Va., now a writer with the Strategic Air Command; Stewart, Chicago, Ill., a salesman; Mrs. Marguerite Frost, St. Paul; Robert, St. Paul, associate of the St. Paul Fire and Marine Insurance Co., St. Paul; Mrs. Betty Griffith, Long Island, N.Y., a teacher; and Thaddeus, Yuma, Ariz., an attorney.

In the Baker home a family closeness coupled with recognition of a moral responsibility not only for one's own behavior but for the well-being of one's fellow man, a respect for education, and a sincere appreciation of the arts, all contributed to the many faceted and well integrated personality of Annie Laurie.

### EDUCATION AND EARLY EMPLOYMENT

Miss Baker received a Bachelor of Arts degree from the University of Minnesota and later attended the school of social service administration at the University of Chicago which granted her a masters degree. She majored in psychiatric social work and spent an additional summer in medical social work under the direction of Edith Abbott, at that time director of the school. Another well-known social worker on the teaching staff was Sopinisba Breckenridge.

Annie Laurie Baker represents Minnesota social work from the predepression era to the present. She has experienced and been a part of all of the major national crises which have affected the social well-being of our citizens and, to some extent, the citizens of the world. She has contributed actively to the social philosophy and policies of our state, and less directly, through the Red Cross and other organizational and teaching contacts, to the national social work philosophy and program. Her first assignment was with the United Charities of St. Paul. It was in the Rice District of this agency that she worked just before the depression. Unemployment was the chief problem in the Mt. Airy district where she also worked and child neglect was common. At this early date cash relief was used as an experiment. Psychological testing was considered new and mental tests were given to all chronic cases. Social work even in those days was with families, and particular attention was paid to the recreation of families of fathers who

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Frances E. Flynn *is director, Department of Social Work, St. Paul–Ramsey Hospital, St. Paul.*

were out of work. It is noteworthy that at that time consultation from a psychiatrist at Wilder Child Guidance Clinic was available for treatment of alcoholics. During this time relief policies were liberal since the real depression had not yet occurred. The agency was able to encourage creative work and provide a stimulating setting for the young social worker. It was this stimulation which encouraged Miss Baker to attend graduate school at the University of Chicago. Following her studies there she returned to the University of Minnesota Hospitals where she was employed from 1930 to 1935. She was the first trained psychiatric social worker in the social service department. She was assigned to the department of neuropsychiatry and in addition had responsibility for dermatology and heart services. It is noteworthy that at that time the pressures from dermatology were so great that most of her time was spent in this area. On Saturdays a special pediatric syphilis clinic was held with as many as 40 children attending. From this experience Miss Baker progressed to the State Department of Public Welfare, then known as the State Board of Control. Her first assignment was in the Children's Bureau under Mr. Charles Hall, director. In her new position as district representative of the northwestern corner of Minnesota, including an area of 16 counties from Elbow Lake to the Canadian border, she primarily supervised services related to child neglect, dependency, illegitimacy, mental retardation, adoptions, and placements. Also included in the assignment were development and supervision of county child welfare boards. After one year at the Children's Bureau, district representatives were combined with the State Relief Department field staff under Mr. Benjamin Youngdahl. The area responsibility was reduced to 10 counties but the duties of Miss Baker were broadened to include supervision of relief programs. Also included were certification for W.P.A., Y.C.C., and surplus commodities. The development of the county welfare board system was furthered at this time. From this responsibility Miss Baker was promoted to the position of assistant director, State Division of the Blind, under the direction of Mr. Maurice Tynan. During this period she drafted the Minnesota Program for the Blind to comply with the Social Security Act and requirements of the Federal Bureau of Health, Education, and Welfare. Shortly thereafter, she was made director of the division. It was through the Aid to the Needy Blind program that I first had the opportunity of knowing Miss Baker. To this program Miss Baker brought interest, vigor, and professional knowledge which contributed much in establishing a good basic program. She initiated the Aid to the Needy Blind program which was organized with central state office control. She also was responsible for beginning the Vending Stand Program, developing the Vocational Program for the Blind, and expanding the Home Teaching Program for the Blind. It was also during this period that she assisted in the establishment of the Minnesota Society for the Prevention of Blindness and worked closely with Dr. Frank Burch and Miss Lydia Christ in continuing this organization.

### THE WAR AND POSTWAR YEARS

World War II offered an opportunity for Miss Baker to demonstrate her sincere patriotism and at the same time make use of her professional knowledge and skill. She, therefore, joined the American Red Cross and was assigned first to the domestic service and later to foreign service. Her initial assignment was that of supervisor at Riley General Hospital, Springfield, Mo. She was at this hospital following the attack on Pearl Harbor—from where casualties were transferred. Later she was transferred as a substitute to McCloskey General Hospital, Temple, Texas, at the time casualties from Guadalcanal were brought in. It also was at this time that the United States Army was just beginning to build military hospitals, and the Red Cross Hospital programs of casework, recreation, and volunteers were developed to meet the increased needs.

In the spring of 1944 Miss Baker was transferred to England where she supervised the staff and assisted in establishing Red Cross programs in the new U.S. military hospital. Later she was promoted to assistant director of the Red Cross Hospital Program in Great Britain. In the spring of 1945 she was sent to supervise the 13th hospital center programs out of Rheims, France. This center of 10,000 beds received the U.S. prisoners from German camps.

A transfer to the Pacific Ocean area as director of the Red Cross Program to Military Hospitals with headquarters in Hawaii presented new responsibilities and opportunities to Annie Laurie. Included in this initial assignment was the responsibility for Red Cross military hospital services in Hawaii, Guam, and the Marianas. Her headquarters during this time was Honolulu. Following the end of the war the military installations were closed. It was during this period that she staffed and supervised the Red Cross program on the Bikini Islands during the first U.S. atomic bomb test. Soon after Miss Baker assumed a new responsibility, that of director for the Red Cross program in military hospitals for the Far East Command with headquarters in Tokyo. Her new responsibility included the programs in Japan, Korea, Okinawa, Guam, the Philippines, and China.

In 1948 Miss Baker returned to the United States. On July 1 she became associated with the University of Minnesota Hospitals under the dual titles of director of the social service department and professor of social work, which titles and positions she presently holds.

### ACTIVITIES, ACCOMPLISHMENTS, AND INTERESTS

In the Twin Cities area Miss Baker has taken an active part in community, civic, social work, and related activities. She has served as president of the Minnesota chapter of the American Association of Social Workers, the Minnesota chapter of the National Association of Medical Social Workers, and the Minnesota Welfare Association. It was during her term as president of the welfare association that recruitment for social work at the state fair was initiated. It also was during her tenure that a bill for the licensing of social workers was introduced in the state legislature; Miss Baker is a firm believer in the licensing of social workers. Other organizational activities include that of being vice-president of the Minnesota Rehabilitation Association and a board member of the following: Minnesota Epilepsy League, Hennepin County Mental Health Association, and Professional Advisory Committee of the Minnesota Association for Mental Health. She also served on several governor's commissions, including those on children and youth, religious interest, the aged, and communication. In addition she was a member of the review committee of the Community Mental Health Program for the State Department of Welfare and the health committee of the Greater Minneapolis United Fund. Miss Baker was active in establishing the Minnesota Epilepsy League, the Minnesota Society for the Prevention of Blindness, and the Minnesota Rehabilitation Association. At present Miss Baker holds membership in the National Association of Social Workers and is a member of the Academy of Certified Social Workers.

To list her accomplishments is only to touch the surface of her influence in the field of social work. In her positions at University Hospitals Miss Baker has made a distinct contribution in the field of education for both medical and paramedical students. She is aware of the need for the social worker to preserve the values and skills peculiar to the medical setting even as he broadens his area of interest and knowledge to include new methods and concepts in social work treatment. Miss Baker's philosophy in hospitals may be stated as follows: In order to make the maximum contribution, social work in medical settings must be an integral part of the medical care plan. The services given must be integrated with the total plan and performed in a cooperating relationship with the physicians and other therapists in the paramedical fields. The services given to patients and the focus always must be directed towards those problems which affect medical care or are the result of the medical condition being treated.

In her community role over many years, she has given unselfishly of her energy and time in an effort to promote needed social, cultural, and related improvements. To me she offered invaluable consultation and support in the reorganization of the department of social work in Ancker Hospital. She has worked actively to improve the quality of nursing home care, rehabilitation programs, local library facilities, and urban renewal. She has demonstrated her ability to see herself not as an isolated person dedicated to a particular program, but as a productive and enlightened member of our community who has both the ability and winningness to contribute her part to the Twin Cities community.

In addition to Miss Baker's professional accomplishments is what I consider a more significant facet of her total personality and one largely responsible for her success: To be a good social worker one must like people, respect people, and gain their good will and confidence. Miss Baker meets people, great and small, as friends and equals. She is at home similarly with the members of the county boards in Minnesota, the University Hospital patient from a rural area, or the university professors and their wives. She knows equally well the broad administrative principles involved in a hospital, a social work department, and agencies and the small but meaningful things which make the difference between good and poor care to a patient, client, and his family. Her wide experience, both professional and personal, has developed her native sense of understanding and enables her to communicate this not only to clients and patients but to her staff as well.

Annie Laurie Baker has many interests which have served to enrich her life and the lives of others. She enjoys gardening, takes piano instruction (playing largely for her own pleasure), has a keen interest in photography, and collects many beautiful objects such as Wedgwood and Satsuma ware, acquired during her extensive travels.

Not the least of her interests is that of entertaining relatives and friends in her St. Paul home. Many come from out of state to share the warm hospitality of her and her mother.

The history of social work in Minnesota cannot be written without including Annie Laurie Baker. Those who have enjoyed the privilege of knowing her as an administrator, teacher, supervisor, caseworker, and member of community organizations will recall with respect and affection her contributions over the past years. For those of us who have had the benefit not only of her excellent professional advice and consultation, but also of her warm generous friendship, there is an added awareness that we are the richer for having enjoyed her forthright and gracious personality.

# *News Briefs . . .*

## North Dakota

DR. JAMES B. SMITH, formerly of California, has opened an office in Bowbells.

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REELECTED TO ACTIVE MEMBERSHIP in the American Academy of General Practice are: Drs. John W. Goven, Clayton E. Jensen, Warren R. Jensen, and Clifford J. Klein, Valley City; Robert L. Jennings, Bismarck; Roy E. Kulland, Fargo; John H. Graham, Grand Forks; and Karl F. Oja, Portland.

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DR. ROBERT C. THOM, a member of the Tri-State Clinic in Bowman, has been reelected to active membership in the American Academy of General Practice.

## Minnesota

REELECTED TO ACTIVE MEMBERSHIP in the American Academy of General Practice are: Drs. Harris P. Hinderaker, Willmar; John S. Siegel, Virginia; Norman L. Hagberg, Montevideo; John W. Anderson, Blue Earth; Albert Olson, Owatonna; Manley F. Juergens, Stillwater; S. T. Normann, Waseca; H. B. Roholt, Bemidji; Russell H. Larsen, Lakefield; Edgar E. Heller, Mankato; Harry J. Smith, Lake Crystal; Lyle Munneke, Clara City; E. J. Kaufman, Appleton; Matthew B. Smorstok, Monticello; Glenn E. Nelson, Fairfax; Arthur J. Barnett, Foley; Allan J. Boyum and J. E. Eckdale, Marshall; Milton L. Kaiser and Lawrence R. Ringhofer, New Ulm; Ernest J. Aulick and Raymond J. Lindeman, Paynesville; Deno J. Wedes and Ernest J. Sowada, St. Paul; Fredrick S. Schnell and Cecil A. Wilmot, Litchfield; and Vern Ohnanson, Carleton S. Strathern, and A. T. Thompson, St. Peter.

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DR. HYMAN S. LIPPMAN of St. Paul, recently retired as director of the Wilder Child Guidance Clinic, will serve as a special consultant on child psychiatry and assist in the development of a division of child psychiatry at St. Paul–Ramsey Hospital.

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DR. W. G. NUESSLE of Springfield, a physician for fifty years, was honored at a testimonial dinner given by the Rotary Club, the Jaycees, and the American Legion and auxiliary.

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DR. DANIEL J. MOOS of Wayzata was elected president of the Northwestern Hospital, Minneapolis, medical staff for 1968. Dr. Harold Katkov, also of Wayzata, was named chief of pediatrics service.

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DR. WILLIAM A. BLACK of New Ulm was elected president of the Loretto Hospital medical staff. Other officers are Drs. Carl J. Fritsche, vice-president, and William J. Muesling, secretary.

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DR. FRANK SANDER of Rochester assumed the presidency of the medical staff of Olmsted Community Hospital. Dr. Charles Field was named president-elect. Both physicians are members of the Olmsted Medical Group.

(Continued on page 16A)

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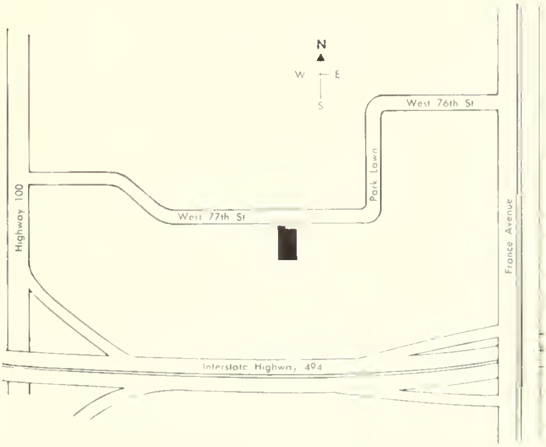

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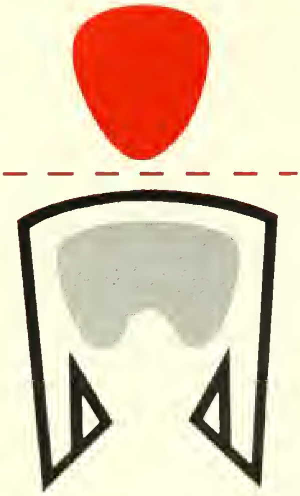

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| ● Phenylpropanolamine Hydrochloride | 25 mg. |
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Among problem patients, greater improvement has been reported[1] for 35% of patients with stubborn allergic conditions following Colrex Decongestant therapy than with previous medications. Equal effectiveness with previous drugs was noted in 34% and less efficacy among 20%.

**Adults and children over 12,** one tablet 3-4 times daily; **children 6–12,** one-half tablet 3-4 times daily. **NOT RECOMMENDED** for children under 6.

**Precautions.** Antihistamines may produce drowsiness. Patients should be cautioned about performing tasks which require alertness, such as driving, operating dangerous machinery. Give tripelennamine with caution to patients with known history of petit mal seizures. Give hypnotics and sedatives with caution to patients receiving tripelennamine. *Use caution in hypertension, hyperthyroidism, diabetes mellitus, or heart disease.*

**Adverse Reactions.** Antihistamines frequently produce some form of adverse response, few of which are serious. Most common are drowsiness, dryness of mouth, dizziness, headache, excitation, gastric discomfort. Latter can be alleviated by taking tablets with food. If symptoms persist, adjust dosage or discontinue medication.

**Warning.** On rare occasions, severe acute hypersensitivity, leukopenia and agranulocytosis have been reported in conjunction with antihistamine therapy. Repeated blood counts are recommended for patients on long term therapy.

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1. Stoesser, A., and Nelson, L.: Clinical evaluation report, July, 1967

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**Adults and children over 12**, 2 teaspoonsful every four hours; **children 6–12**, 1 teaspoonful every four hours; **children 1–6** one-half teaspoonful every four hours.

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(Continued from page 13A)

DR. NORMAN L. HAGBERG of Montevideo was elected chief of staff of the Chippewa County-Montevideo Hospital for 1968.

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DR. LLOYD C. GILMAN of Willmar was named chief of staff of Rice Memorial Hospital, succeeding Dr. A. J. Ellinger, who became a member of the executive board. Other new officers are Drs. R. W. Hazen, vice-chief of staff; M. F. Sadd, secretary-treasurer; W. M. Salter, chief of medicine; R. A. Thompson, chief of surgery; W. E. Hinz, chief of obstetrics-gynecology; and A. H. Ruhe, chief of radiology. Drs. Gilman, Ellinger, Hazen, and Sadd, together with Dr. D. L. Jacobs make up the executive committee.

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DR. RUDOLPH ROSENQUIST, a native of Duluth, joined the staff of the Glencoe Medical Clinic temporarily before continuing his medical study later this year.

* * * *

FOUR MEMBERS of a St. Paul medical family will be associated with the University of Minnesota Medical School on July 1 when Dr. Michael D. Levitt, now an instructor at Boston University, joins the Minnesota faculty as an assistant professor in the gastrointestinal unit. His father, Dr. George X. Levitt, is an assistant professor of clinical medicine and his brother, Dr. John Levitt, an assistant professor of medicine at Minnesota. Another brother, David, is a medical student in the Minnesota M.D.-Ph.D. program.

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**FREE PARKING**

DR. HERB L. HUFFINGTON of Waterville was appointed to a one-year term on the 6-man public relations committee of the American Academy of General Practice.

* * * *

DR. T. R. FRITSCHE of New Ulm was honored as one of the city's outstanding citizens at a testimonial dinner attended by 400 persons.

* * * *

DR. FRANK GAERTNER of St. Paul was elected chief of staff of St. John's Hospital. Other officers elected were Drs. William Jackson, vice-chief of staff; Terrance Henderson, secretary; and Robert Emmons, Charles Beck, and Robert Flom, medical staff executive committee.

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DR. DANIEL DEGALLIER of Winona was reelected to a third one-year term as president of the Winona County Medical Society. Also reelected to one-year terms were Drs. Dale J. Hawk of St. Charles, vice-president, and Herbert von Rohr Heise of Winona, secretary-treasurer. Drs. Arnold Fenske and John Tweedy, both of Winona, were named members-at-large.

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DR. REX JOHNSON of New Ulm was elected president of the Union Hospital medical staff. Other officers are Drs. Milton Kaiser, vice-president, and William Black, secretary.

* * * *

DR. GERTRUDE PEASE, a specialist in bone marrow pathology, retired from the staff of the Mayo Clinic, Rochester, after twenty-one years' service. She is known for her pioneer work in the procedure of critical pathologic review of sections of bone marrow.

* * * *

DR. H. C. WINGE of Wheaton was appointed village health officer, succeeding Dr. Paul Vangerud. Dr. Winge has previously held the office.

* * * *

DR. ALBERT I. BALMER of Duluth was installed as president of the St. Louis County Medical Society. Also installed was Dr. Andrew E. Reardon, secretary-treasurer. Dr. Henry Fisketti was elected president for 1969.

* * * *

TOPICS ranging from heart block to hypertensive emergencies were discussed by 22 nationally recognized experts at a two-day symposium in Minneapolis on the diagnosis and medical treatment of heart attack. More than 350 Midwest physicians attended the program, cosponsored by the American Therapeutic Society and the Minnesota Heart Association.

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DR. JOHN R. S. REMSBERG, a native of St. Paul and formerly deputy chief of the department of medicine at the U.S. Health Service Hospital in Baltimore, Md., joined the St. Louis Park Medical Center as a specialist in internal medicine.

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DR. A. B. ROSENFIELD of Minneapolis, recently retired as director of special services for the Minnesota State Board of Health, was appointed by Mayor Arthur Naftalin to the Minneapolis Board of Public Welfare, replacing Dr. E. J. Huenekens, long-time member who declined reappointment.

* * * *

DR. L. EMMERSON WARD, a consultant in internal medicine, was reelected to a fifth one-year term as chairman of the board of governors of the Mayo Clinic, Rochester. Dr. O. H. Beahrs, head of a section of surgery, was reelected vice-chairman.

DR. WILLIAM MENNIS of Belcourt, N.D., will join Dr. T. J. Lelwica in practice at the Lakeland Clinic, Staples, in July.

* * * *

DR. A. B. BAKER, professor and chairman of the University of Minnesota's neurology department, was elected senior vice-president of the new Epilepsy Foundation of America. The foundation, a charitable organization, is the result of a union of the Epilepsy Association of America and the Epilepsy Foundation.

* * * *

HONORED for their scientific exhibit at a meeting of the American Academy of Dermatology in Chicago were Drs. Harold Perry, C. G. Moertel, and J. M. Kiely of the Mayo Clinic, Rochester. They received the Academy's silver citation for an exhibit on "Cutaneous Clues to Visceral Cancer."

* * * *

DR. ROGER STRAND of Minneapolis left a surgical residency at Hennepin County General Hospital to spend six months as a volunteer at a Methodist mission hospital in India.

* * * *

DR. W. A. OWNES of Montevideo has been named councillor for the third district of the Minnesota State Medical Association.

* * * *

DR. V. P. GEORGE of Le Sueur spoke at the state-wide orientation conference for Minnesota Cancer Crusaders in Minneapolis.

* * * *

DR. DENNIS W. WATSON, head of the department of microbiology at the University of Minnesota Medical School, has been elected president of the American Society for Microbiology.

* * * *

DR. JOHN S. SIEGEL of Virginia headed the 1968 Heart Fund Drive for St. Louis County.

* * * *

DR. LAWRENCE R. RINGHOFER of New Ulm was named "Outstanding Young Man" at the annual Jaycees Award Banquet.

* * * *

DR. GEORGE C. BINGHAM of Bird Island will open a medical practice in Olivia.

* * * *

DR. RAMON MEDIOLA has been elected chief of staff of Waconia Ridgeview Hospital, succeeding Dr. John P. Savaryn. Drs. Leighton W. Larson and John W. Clarke were elected vice-chief and secretary-treasurer, respectively.

# *Deaths . . .*

DR. KENNETH OGLE, 65, Rochester, Minn., died Feb. 22. A former senior consultant in the Mayo Clinic's section of biophysics, Dr. Ogle had received national and international honors for his studies in visual physiology, ophthalmic optics, and space perception.

* * * *

DR. WILLIAM E. TAYLOR, 43, Minneapolis, Minn., obstetrician and gynecologist, died Feb. 24. He was on the staff of St. Mary's, Glenwood Hills, and Methodist hospitals.

# *Classified Advertisements*

RATES: 70 words or less, one time, $3, two consecutive times, $5. Copy must reach us by the 10th of the month preceding publication. REPLIES to advertisements with key numbers should be addressed in care of THE JOURNAL-LANCET, 65th at Valley View Road, Southdale Park, Minneapolis, Minnesota 55424.

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**Warning**
**Fatal cases of aplastic anemia have been reported following treatment with Tegretol. Agranulocytosis, thrombocytopenia and transitory leukopenia have also been observed. Complete blood and platelet counts should be done prior to and at regular intervals during treatment with the drug (see recommendations under "Important Note and Precautions") to help in the early detection of serious bone marrow injury. Abnormalities in initial blood tests should rule out use of the drug. Also, patients should be made aware of such early toxic signs of a potential hematologic problem as fever, sore throat, mouth ulcers, easy bruising and petechial or purpuric hemorrhage. Should such signs appear, the patient should be advised to discontinue the drug and to report to the physician immediately.**

**Indication** Tegretol is indicated in the treatment of the pain associated with true trigeminal neuralgia. It is not a simple analgesic and should never be administered for relief of trivial facial aches or pains.

**Contraindication** Do not use in those with a known sensitivity to any tricyclic compound or in those being treated with M.A.O.I. agents. As long a period as possible should elapse before using Tegretol in patients who have been treated with M.A.O.I.'s, with a minimum of 7 days. In such cases, initial dosage should be low and the patient's reaction to gradual increments closely observed.

**Important Note and Precautions** Familiarity with the clinical symptoms which lead to an accurate diagnosis of true trigeminal neuralgia and with the complete prescribing information, careful patient selection, a thorough examination before treatment and close patient supervision throughout the treatment period are essential to the safe and effective use of this drug.

Where feasible, Tegretol should not be used in conjunction with any potent drug which may increase the possibility of toxic reactions.

*In pregnancy,* the drug should not be prescribed during the first trimester and thereafter only to patients in whom the clinical situation warrants the potential risk. It should not be administered to nursing mothers.

Patients with increased intraocular pressure should be closely observed during treatment with this drug because of its anticholinergic effect. Because of the drug's relationship to other tricyclic compounds, the possibility of activation of latent psychosis and, in the elderly, of confusion or agitation, should be considered.

Dizziness and drowsiness may occur and patients should be cautioned about the hazards of operating machinery or automobiles and of engaging in other hazardous tasks.

**Use cautiously in patients with a history of coronary artery disease, organic heart disease, congestive failure or liver disease.**

**Before initiating therapy, the following laboratory procedures should be performed:**

1. Complete blood and platelet counts which, if abnormal, should rule out the use of the drug.
2. Baseline evaluations of liver function.

**During treatment with Tegretol, the following laboratory procedures should be performed:**

1. Complete blood and platelet counts should be done at intervals of one week during the first month of drug treatment, every two weeks during the second and third months, and at monthly intervals thereafter for as long as the patient is taking the drug. A trend toward a decreasing white blood cell count should suggest a dosage reduction and more frequent laboratory and clinical evaluations. Should this trend continue, the drug should be discontinued.
2. Liver function tests must be performed at regular intervals during treatment with this drug since liver damage may occur during therapy. The drug should be discontinued immediately in cases of aggravated liver dysfunction or active liver disease.
3. Periodic eye examinations, including slit-lamp, funduscopy and tonometry, are recommended for patients being treated with this drug since many phenothiazines and related drugs have been shown to cause eye changes.
4. Complete urinalysis and BUN should be done on patients treated with Tegretol because of observed renal dysfunction.

**Adverse Reactions** Dizziness, drowsiness, unsteadiness on the feet, nausea, vomiting, aplastic anemia, transitory leukopenia, agranulocytosis, eosinophilia, leukocytosis, thrombocytopenia, purpura, abnormalities in liver function tests, cholestatic and hepatocellular jaundice, urinary frequency, acute urinary retention, oliguria with elevated blood pressure, albuminuria, glycosuria, elevated BUN, microscopic deposits in the urine, impotence, disturbances of coordination, confusion, headache, fatigue, blurred vision, transient diplopia and oculomotor disturbances, speech disturbances, abnormal involuntary movements, peripheral neuritis and paresthesias, depression with agitation, talkativeness, nystagmus, tinnitus, paralysis and other symptoms of cerebral arterial insufficiency, pruritic and erythematous rashes, urticaria, Stevens-Johnson syndrome, photosensitivity reactions, alterations in skin pigmentation, exfoliative dermatitis, alopecia, diaphoresis, recurrence of thrombophlebitis, erythema multiforme and nodosum, aggravation of disseminated lupus erythematosus, gastric distress, abdominal pain, diarrhea, constipation, anorexia, dryness of the mouth and pharynx, glossitis, stomatitis, fever, chills, adenopathy, lymphadenopathy, aching joints and muscles, leg cramps, conjunctivitis, left ventricular failure, aggravation of hypertension, hypotension, syncope and collapse, edema, aggravation of coronary artery disease and congestive heart failure. (Whether these cardiovascular effects are drug-related is not known. However, some of these complications have resulted in fatalities.) The necessity for discontinuing the drug should be dictated by the gravity and severity of the adverse reactions.

**Dosage and Administration** The drug should always be taken with meals, if possible.

*Initial:* One-half tablet (100 mg.) b.i.d. on the first day. Thereafter, the dose should be increased in one-half tablet (100 mg.) increments every 12 hours until freedom from pain is achieved. To relieve pain, between 200 mg. and 1200 mg. per 24 hours may be necessary.

*Maintenance:* Initial control of pain can be maintained in most patients with a dose of 400 mg. to 800 mg. daily. Maintenance doses may range between 200 mg. and 1200 mg. daily.

At least once every 3 months during treatment period attempts should be made to discontinue the drug or to reduce the dose to the minimum effective level.

**Availability** Round, white, single-scored tablets of 200 mg. in bottles of 100 and 1000. (B)46-820-A

**For complete details, please see Prescribing Information.**

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Before prescribing, see complete information, including adverse effects reported with phenothiazines and symptoms and treatment of overdosage, in SK&F literature or *PDR.* The following is a brief precautionary statement.

**Contraindications:** Comatose states or the presence of large amounts of C.N.S. depressants.

**Precautions:** Potentiation of C.N.S. depressants may occur (reduce dosage of such agents when used concomitantly). Use with caution in patients with chronic respiratory disorders. Antiemetic effect may mask overdosage of toxic drugs or obscure other conditions. Administer in pregnancy only when necessary. Because of possible drowsiness use cautiously and warn patients who operate vehicles or machinery.

**Adverse Reactions:** Drowsiness; dry mouth; nasal congestion; constipation; amenorrhea; miosis; mild fever; weight gain; hypotensive effects, sometimes severe with I.M. administration; epinephrine effects may be reversed; dermatological reactions; parkinsonism-like symptoms on high dosages (in rare instances, may persist); lactation and moderate breast engorgement (in females on high dosages); and less frequently, cholestatic jaundice (use cautiously in patients with liver disease). Adverse reactions occurring rarely, include: mydriasis; agranulocytosis; skin pigmentation; epithelial keratopathy; lenticular and corneal deposits (after prolonged substantial doses).

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99th Year of Publication

JUNE 1968 / Vol. 88, No. 6 / Pages 133 - 154

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THE JOURNAL-LANCET, a publication of COWLES COMMUNICATIONS, INC., is published monthly by LANCET PUBLICATIONS, INC., 4015 West 65th Street, Minneapolis, Minnesota 55435. Telephone 927-4471, area code 612. Title registered at U.S. Patent Office. Printed in U.S.A. Subscriptions: $5 a year, 50 cents a copy (special issues $1 a copy). Louis M. Cohen, Publisher; Donald A. Mullan, Associate Publisher.

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BOSTON
14 JUN 1968

# True Drug Failure... How often does it occur with Flagyl®?

brand of metronidazole

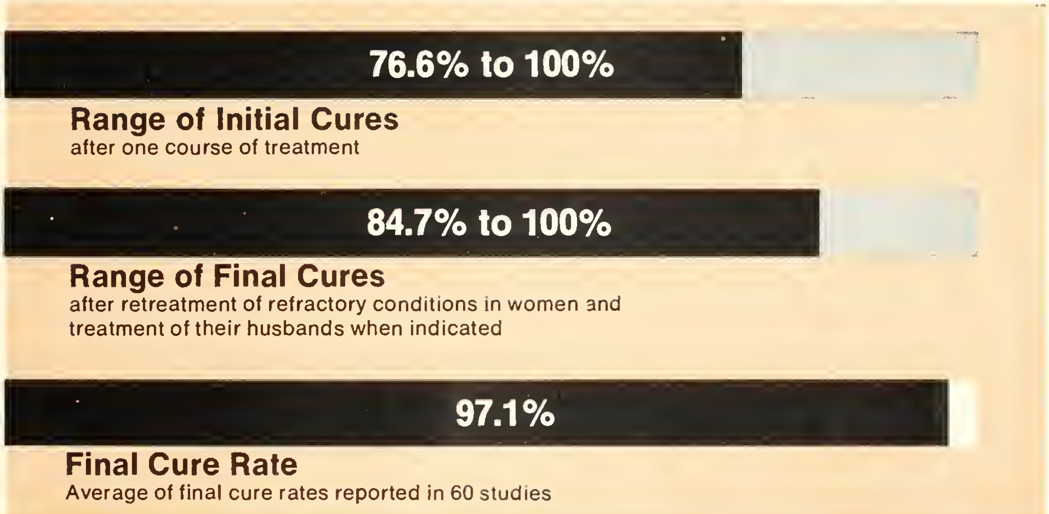
In clinical practice an occasional uncooperative or drug-sensitive patient or spouse makes 100 per cent cure of trichomonal vaginitis in large series of patients difficult.

Further a very few patients who apparently absorb Flagyl poorly and, rarely, those with trichomonads resistant to Flagyl have been reported. Nevertheless, approximately half the United States investigators report a final cure rate of 100 per cent with Flagyl.

Sixty papers[1] published on the use of Flagyl in trichomoniasis in the United States and comprising a total of 10,700 patients have been evaluated. In thirty of the papers it was declared that all patients adequately followed and treated were free of trichomonal infection.

Analysis of all of these papers shows that the incidence of cures for the *initial* course of therapy ranged from 76.6 per cent to 100 per cent. The cure rates after retreatment of female patients and treatment of their husbands when indicated ranged from 84.7 to 100 per cent. The average final cure rate reported in all investigations was 97.1 per cent.

**Cure rates in 10,700 patients**
treated for trichomoniasis with *Flagyl* and reported in 60 papers published in the United States.



*Indications:* Flagyl is indicated only in the treatment of trichomoniasis in both men and women.

*Contraindications:* Pregnancy; disease of the central nervous system; evidence or history of blood dyscrasia.

*Precaution:* Complete blood cell counts should be made before, during and after therapy, especially if a second course is necessary.

*Side Effects:* Infrequent and minor side effects include nausea, metallic taste and furry tongue. Gastrointestinal disturbances, flushing and headache sometimes occur, especially with concomitant ingestion of alcohol. The taste of alcoholic beverages may be altered. Other effects, all reported in an incidence of less than 1 per cent, are diarrhea, dizziness, vaginal dryness and burning, dry mouth, rash, urticaria, gastritis, drowsiness, insomnia, pruritus, sore tongue, darkened urine, anorexia, vomiting, epigastric distress, dysuria, depression, vertigo, incoordination, ataxia, abdominal cramping, constipation, stomatitis, numbness or paresthesia of an extremity, joint pains, confusion, irritability, weakness, cystitis, pelvic pressure, dyspareunia, fever, polyuria, incontinence, decreased libido, nasal congestion, proctitis and pyuria. Elimination of trichomonads may aggravate candidiasis.

*Dosage and Administration:* In women: one 250-mg. oral tablet three times daily for ten days. A vaginal insert of 500 mg. is available for local therapy when desired. When used, one vaginal insert should be placed high in the vaginal vault each day for ten days; concurrently two oral tablets should be taken daily.
In men: When trichomonads are demonstrated, one 250-mg. oral tablet twice daily for ten days in conjunction with treatment of his female partner.

*Dosage Forms:* Oral tablets—250 mg.
Vaginal inserts—500 mg.

1. Complete list of references on request.

SEARLE *Research in the Service of Medicine*

# COLREX™ DECONGESTANT

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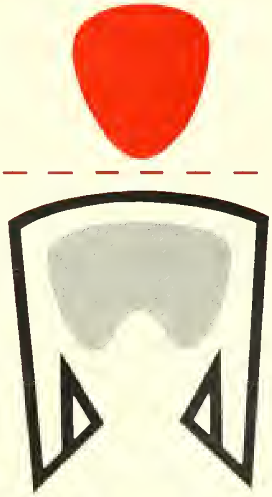

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Decongestants

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| ● Phenylpropanolamine Hydrochloride | 25 mg. |
| ● Phenylephrine Hydrochloride | 10 mg. |

Scored tablets for easy dosage adjustment.

Among problem patients, greater improvement has been reported[1] for 35% of patients with stubborn allergic conditions following Colrex Decongestant therapy than with previous medications. Equal effectiveness with previous drugs was noted in 34% and less efficacy among 20%.

Adults and children over 12, one tablet 3-4 times daily; children 6–12, one-half tablet 3-4 times daily. **NOT RECOMMENDED** for children under 6.

**Precautions.** Antihistamines may produce drowsiness. Patients should be cautioned about performing tasks which require alertness, such as driving, operating dangerous machinery. Give tripelennamine with caution to patients with known history of petit mal seizures. Give hypnotics and sedatives with caution to patients receiving tripelennamine. *Use caution in hypertension, hyperthyroidism, diabetes mellitus, or heart disease.*

**Adverse Reactions.** Antihistamines frequently produce some form of adverse response, few of which are serious. Most common are drowsiness, dryness of mouth, dizziness, headache, excitation, gastric discomfort. Latter can be alleviated by taking tablets with food. If symptoms persist, adjust dosage or discontinue medication.

**Warning.** On rare occasions, severe acute hypersensitivity, leukopenia and agranulocytosis have been reported in conjunction with antihistamine therapy. Repeated blood counts are recommended for patients on long term therapy.

**Caution:** Federal law prohibits dispensing without a prescription.

1. Stoesser, A., and Nelson, L.: Clinical evaluation report, July, 1967

## COLREX™ EXPECTORANT

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COLREX Expectorant Syrup provides specific expectorant action to loosen tight bronchial secretions in such conditions as bronchitis, asthma, bronchiectasis and the common cold.

COLREX Expectorant contains **no** antihistamines or antispasmodics, and therefore avoids the drying effect of these agents which would counteract the desired expectorant action.

Adults and children over 12, 2 teaspoonsful every four hours; children 6–12, 1 teaspoonful every four hours; children 1–6 one-half teaspoonful every four hours.

Because it is solely an expectorant, other medications can be prescribed with COLREX Expectorant without hazard of overdose or interference. Use with Rowell Iso-Tabs 60 for asthma and with Colrex Compound for cough due to common cold.

Precautions. Overly large amounts of COLREX Expectorant Syrup may cause nausea and vomiting. As with any drug, on rare occasions a patient may exhibit hypersensitivity.

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The Journal-Lancet

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Quain and Ramstad Clinic Series

# Complications of Cardiac Catheterization and Angiography

## Catheterization Laboratory Experience in a Small Hospital

W. F. HOOK, M.D., and R. M. BERG, M.D.
Bismarck

IN RECENT MONTHS, serious complications such as ventricular fibrillation,[1] cardiac arrest,[2] and transient myocardial damage[3] have been reported during angiocardiographic procedures. In a survey questionnaire, Lang[4] has reviewed over 11,000 retrograde aortogram procedures and found 7 deaths and 81 serious complications. The literature is replete with reports of false aneurysms, vascular thrombosis, artery perforation, and other problems associated with these diagnostic procedures.

This is a report of significant complications encountered in 521 consecutive cardiac catheterizations or selective arteriograms, excluding cerebral angiograms, performed in the heart laboratory* at the Bismarck Hospital from 1958 through October 1966. Two hundred sixty of these were cardiac catheterizations. The age range in the cardiac catheterization patients was from 4 months to 55 years. In the group who had selective arteriograms, the oldest patient was 87.

Selective case histories are presented to illustrate the complications encountered.

### EMBOLIC PHENOMENA

Two cases of homonymous hemianopsia occurred, one following a renal arteriogram through a left brachial artery and one following a thoracic arch aortogram via the right axillary artery. Both resulted in apparently permanent hemianopsia.

*Case 1.* On Nov. 9, 1962, this 58-year-old white man had bilateral renal arteriograms by the retrograde femoral artery technique for evaluation of hypertension. Narrowing of the left renal artery and bilateral femoral atherosclerosis were observed. After a left renal endarterectomy, the patient's hypertension was transiently improved, but several weeks later he again developed increasing hypertension and, despite medical treatment, his symptoms progressed. A second percutaneous renal arteriogram was done on April 25, 1963, via the left brachial artery. Immediately following this procedure the patient developed a right homonymous hemianopsia. Following a left nephrectomy on May 1, 1963, the blood pressure dropped from a level of 230/110 to 160/180, where it remained. Homonymous hemianopsia has persisted to the present time.

### ARTERIAL-VENOUS FISTULA

Two cases of arteriovenous fistula occurred involving the axillary artery and vein. Both fistulae were surgically corrected with satisfactory results. Neither patient had systolic pressures exceeding 160 mm. Hg.

*Case 2.* In May of 1966, a 49-year-old white man had thoracic and abdominal aortograms from the right axillary artery approach for suspected abdominal aneurysm. The diagnosis was confirmed and the aneurysm subsequently resected. Two days after the aortogram, the

---

W. F. HOOK *and* R. M. BERG *are from the Quain & Ramstad Clinic, Bismarck.*

*This laboratory was founded and this study made with assistance from the John A. Hartford Foundation and the Bismarck Medical Foundation. Cardiografin was supplied by E. R. Squibb and Sons.

patient developed a thrill and a loud bruit over the axilla. Diagnosis of arteriovenous fistula was confirmed at surgery and repaired on May 31. Three months after the repair the patient had no complaints.

### CARDIAC ARREST

One case of cardiac arrest occurred during selective arteriography. Two additional cases of cardiac arrest—one was ventricular fibrillation—occurred during cardiac catheterization, and one case of prolonged arrhythmia—supraventricular tachycardia—which lasted several hours was found. The patients with cardiac arrests were successfully resuscitated on the fluoroscopic table and the arrhythmia subsided spontaneously.

*Case 3.* This 70-year-old white woman had a percutaneous aortogram on Sept. 12, 1961, for evaluation of the extent of an hemangioma of the left posterior back. Preoperative medication consisted of ⅙ gr. of morphine sulphate, 1.5 gr. of sodium luminal, and 50 mg. of hydroxyzine (Vistaril®) intramuscularly. Under local procaine anesthesia, a polyethelene No. 160 tubing was inserted by intra-arterial needle over a small guide wire and advanced under fluoroscopic control to the arch of the aorta. The tubing was kept patent for ten minutes with an infusion of sodium chloride with heparin. With a Gidlund syringe set at 40 kg. per square centimeter pressure, 35 cc. of Renovist was injected over four to six seconds. At the end of the injection, bilateral clonic facial contractions were noted, followed by generalized convulsive movements and disappearance of the heart beat on the EKG monitor. The patient became cyanotic and was given external cardiac massage for approximately eighty seconds. The apnea ended and the EKG line returned to normal on the scope.

Following the return of normal sinus rhythm, the patient was given oxygen. Her blood pressure was 140 systolic. The EKG showed no change from the preoperative record in six standard leads. Epinephrine (Adrenalin®) was not given and the patient was coherent following her recovery. A year after her seizure and cardiac arrest the patient was well with no apparent residuals.

*Case 4.* This middle-aged man underwent a right heart catheterization in September 1966 for placement of a catheter pacemaker in an attempt to correct bradycardia with heart block following a recent massive myocardial infarction. Following successful correction of the arrhythmia and after all catheters were withdrawn, the patient developed a cardiac arrest on the fluoroscopic table. He was successfully resuscitated with external cardiac massage followed by defibrillation with electric shock. The patient remained in critical condition because of the myocardial infarction and succumbed several days later.

*Case 5.* This 29-year-old white man had a retrograde axillary artery catheterization on Aug. 17, 1965, for evaluation of systolic hypertension and rheumatic valvular heart disease. Following the injection of 45 cc. of Renovist into the left ventricle, the patient developed ventricular tachycardia merging into ventricular fibrillation. At that time, he had briefly dilated pupils and became anxious and excited. The cardiologist quickly thumped his chest, told him to cough vigorously, and the EKG returned to a normal sinus rhythm. Subsequently, the catheterization was carried out in a routine fashion and no further arrhythmias were noted. When last seen in March 1966 he was asymptomatic.

COMPLICATIONS DURING 521 SELECTIVE ARTERIOGRAPHY AND CARDIAC CATHETERIZATIONS

| *Complication* | *No. of cases in arteriography* | *No. of cases in cardiac catheterization* | *Total* |
|---|---|---|---|
| Extravasation of contrast | 3 | 3 | 6 |
| Embolic phenomenon | 2 | | 2 |
| Arteriovenous fistula | 2 | | 2 |
| Cardiac arrest | 1 | 2 | 3 |
| Ischemic peripheral neuropathy | 1 | | 1 |
| Arterial perforation | 1 | | 1 |
| False aneurysm | | 2 | 2 |
| Death | | 1* | 1 |
| Extraluminal catheterization | | 1 | 1 |
| | | | 19 |

*Actually occurred during venous cutdown before heart catheterization was started

### EXTRAVASATION OF CONTRAST

Three cases of extravasation of contrast occurred during injection with the Gidlund syringe in selective arteriography. All—one man and two women—were in the 50- to 60-year age group. All experienced pain which lasted several hours, and all recovered without impairment. Two of the cases of extravasation occurred via the right axillary approach with extravasation from the axillary or subclavian artery. One was a retrograde femoral arteriogram with sublingual migration of contrast media. In two of the cases difficulty had been encountered in withdrawal of blood before the injection.

Two intramural injections of contrast media in the right ventricle were encountered with migration of contrast into the pericardial sac. One case of extravasation occurred in the arch of the aorta. No serious residuals occurred in any of the three, but prolonged observation was necessary and all had some chest pain.

*Case 6.* This 15-year-old white boy was referred for evaluation of congenital heart disease with possible pulmonic stenosis and underwent a right-heart catheterization on April 20, 1965. Approach was made through the right medial brachial vein and a Cournand needle was inserted into the right femoral artery. A triple lumen catheter was advanced into the brachial vein under fluoroscopic control and passed into the right pulmonary artery. Following completion of oxygen and pressure studies, the catheter was withdrawn, a No. 8 RA catheter inserted and advanced into the right ventricle outflow tract, and the patient positioned in the left anterior oblique position for the injection. The Gidlund syringe was armed with 35 cc. of methylglucamine diatrizoate (Cardiografin®) at 37° C. and a 65-kg. pressure per square centimeter was set. Injection was made after suitable checking of the test dose. During the injection, it was apparent that some of the contrast media passed through the walls of the heart into the pericardium. The patient had pain which lasted for fifteen minutes, for which he was given ⅙ gr. of morphine sulfate. The EKG showed flattening to inversion of the T wave at the time the catheter remained in the right ventricular outflow tract. When the catheter was withdrawn, the T wave became iso-electric and upright. Subsequently, a pericardial tap was attempted with a 20-guage needle, but no fluid was obtained. The patient was discharged three days later in satisfactory condition. No murmurs or friction rubs were present at the time of discharge. A diagnosis of subvalvular pulmonic stenosis was confirmed. When last seen in July of 1966, the patient was asymptomatic.

### ISCHEMIC NEUROPATHY OF LEFT HAND

One case of ulnar ischemic neuropathy resulted after an open brachial arteriotomy in a 63-year-old white woman.

*Case 7.* One injection of Cardiografin, 85%, had been attempted but failed due to a blowout at the catheter-power syringe connection. Following the attempted first injection, the artery went into spasm and difficulty was encountered restoring circulation to the hand. At this time, the temperature regulator on the Gidlund syringe was noted to read 27° C. A second injection was made with 80 cc. of methylglucamine diatrizoate (Renografin®), 65%, through the brachial artery and circulation was again interrupted for twenty to thirty minutes during catheterization, injection, and closure of the arteriotomy.

Following operation, the arm was noted to be mottled and cyanotic. Ice packs were applied and the artery was injected with 1% procaine. On the following day, the radial pulse was barely palpable and the patient was noted to have some ulnar neuropathy. This ischemic neuropathy persisted until her death following surgery for ruptured abdominal aneurysm three weeks later.

### PERFORATION OF AN ARTERY

One case of perforation of the right iliac artery occurred during attempted retrograde arteriography in a 44-year-old white man with extensive atherosclerosis of the iliacs. Pain and a sharp rise of blood pressure occurred with perforation and immediate surgical repair was successfully carried out with Teflon graft prosthesis.

### FALSE ANEURYSMS

Two cases of false aneurysms occurred after arterial puncture for left-heart catheterizations. In both patients difficulty in controlling bleeding was noted at the arteriotomy site; both subsequently developed swelling and transmitted pulsations in the area, and both had successful surgical resection of false aneurysms; one in a femoral artery and one in a brachial artery.

### PREOPERATIVE DEATH

One death occurred in a 6-month-old child who was to have a right heart catheterization for suspected atrial or ventricular septal defect. Cardiac arrest developed during venous cutdown on an antecubital vein. Resuscitation efforts were unsuccessful. Postmortem examination showed an intra-atrial septal defect, right ventricular hypertrophy, and pulmonary edema. Premedication had consisted of 12.5 mg. of meperidine (Demerol®), 3.25 mg. of promethazine hydrochloride (Phenergan®), and 3.25 mg. of promazine.

### EXTRALUMINAL CATHETERIZATION

One suspected extraluminal catheterization occurred via the femoral vein approach for a right heart study. It was recognized when difficulty was encountered getting past the sacral prominence and no blood could be withdrawn. Position of the catheter was corrected and the catheterization proceeded without further difficulty.

## DISCUSSION

Embolic phenomena as a result of arterial puncture or catheterizations are well known. Greenstone[5] and colleagues reported five cases of arterial thrombosis, probably as a result of embolic phenomena. He states that the transfemoral technique should not be used where there is evidence of atherosclerotic disease of the terminal aorta or the iliofemoral arteries. Most other authorities agree that arterial occlusion may result from dislodging an atherosclerotic plaque. Two cases of hemianopsia presented in this report were likely the result of embolism, more probably a dislodged atherosclerotic plaque.

Pseudoaneurysms and arteriovenous fistula are usually the result of arterial punctures in which bleeding is not well controlled. Extraluminal catheterization and extravasations of contrast which occur as complications are the result of poorly placed catheters. Care must be taken to avoid these hazards.

Rowe and Zarnstorff[1] speculated that ventricular fibrillation could result from a transient high-voltage charge due to a poorly grounded mechanical injector. Others have attributed cardiac arrhythmias or cardiac arrest to endocardial stimulation of the catheter or from the power injection. Allergic reactions from contrast media also have been implicated. The latter causes have not been excluded in the cases presented here.

No definite cause can be attributed to the unfortunate death of the child who was scheduled for study but had not been catheterized.

The single case of ischemic peripheral neuropathy was the result of prolonged interrupted circulation during the procedure. In addition, the low temperature in the Gidlund syringe may have contributed to arterial spasm.

Despite these complications, the value of the diagnostic procedures far outweighs the risk involved. Significant morbidity was found to be less than 4% in this series. Others have reported complications ranging from less than 1% to over 12% in series of more than 100 cases.

## SUMMARY

Among 521 consecutive cardiac catheterizations and selective arteriograms, excluding cerebral angiograms, there were 19 significant complications; morbidity was approximately 4%.

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# Reactions to a Patient Dining Room in a Cancer Parahospital

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ALTHOUGH MANY HOSPITALS and nursing homes utilize a patient dining room concept, the operational effectiveness and psychological therapeutics of a communal patient dining room in a cancer hospital setting have not been investigated. Do patients with cancer enjoy eating with each other? Is a communal dining room for cancer patients a wise plan? Is participation in a patient dining room a psychologically therapeutic experience for cancer patients? If the nationwide need for adequate facilities for patients with advanced cancer is to provide the optimal therapeutic advantages, these problems need evaluation. The Masonic Memorial Hospital of the University of Minnesota Medical Center is a facility meeting the needs of patients with advanced cancer and other serious chronic illnesses for a level of care between acute general hospital and nursing home care.[1] As part of its attempt to meet the total needs of its patients, this cancer "parahospital" contains a communal patient dining room.

It has been contended that a dining room service for ambulatory, hospitalized patients, in contrast to room service of meals, affords advantages to the staff and administration as well as benefits for the patient. From the hospital's point of view, dining room facilities provide [1] shortened time and distance between the preparation and serving of food, [2] a closer relationship between patient and dietitian, [3] the possibility of adjusting the quantity of food taken to the immediate appetite, thus lowering plate waste, and [4] an aid in conserving the time of dietetic and nursing personnel.

Benefits to the patient include [1] a means of implementing the doctor's prescription for early rehabilitation, [2] the opportunity to teach the patient self-reliance in his nutritional needs, [3] an indirect but useful incentive in the field of motor skills, and [4] a pleasant atmosphere conducive to pleasurable eating, sociability, and relaxation with a favorable effect on the patient's mental outlook.[2]

Furthermore, an individual discharges anxiety through muscular activity and may indeed display anxiousness and depression when he cannot be active.[3] In short, it appears that morale and meals are related and, further, that such a relation may be rooted as deeply in psychological factors as in pure nutritive values.[4] In addition to the advantages of efficiency and economy in operation, therefore, it has been postulated that a dining room for ambulatory patients provides a psychological boost for the patient.[5]

Such generalizations about dining rooms in general hospitals or even in long-term nursing facilities need not necessarily be applicable in an institution designed specifically for patients with serious chronic illnesses such as cancer. For indeed, "the cancer patient must be seen as a person under a severe stress—a stress which may threaten or disrupt important patterns of adaptation which the patient has evolved."[3] Any discussion of a dining room facility in an institution which caters specifically to cancer patients must, therefore, be conducted in the light of the special needs of a patient with such a serious, life-threatening, chronic disease.

Patients with cancer may employ psychological mechanisms in processing information about their malignant disease which may be similar to those observed in psychoneurotic patients. These defense mechanisms include suppression, denial, dissociation, identification, regression, conversion, and sublimation.[6] Cancer patients may show psychopathology and some of the following reactions in varying degrees: dependency,

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grief, guilt, shame, anger, anxiety, depressions, feelings of self-punishment and hypochondriacal responses or even obsessive compulsive reactions. The distress observed in such patients "is to be understood in large part as the result of a sudden, severe shift in the patient's system of estimated probabilities of survival, degree of comfort, future group relationships, and so on."[6]

The Masonic Memorial Hospital was established as a part of the University of Minnesota Medical Center to provide a subacute level of care for patients with advanced cancer and other serious chronic diseases. Its aim is to provide a setting in which the medical and psychological needs of such patients can be met. For many patients, an integral part of their experience at this hospital is its patient dining room. Here, patients may socialize while eating freshly prepared meals in a modern, pleasant atmosphere.

This study was designed to assess the effectiveness of the patient dining room in meeting the needs of the particular type of patients in the Masonic Memorial Hospital. Its purpose was to examine the patient dining room in two regards: first, to survey the patients' attitudes toward the facility and to better understand how it is used by patients and, second, to study and, if possible, to quantify the effects of exposure to the dining room, with its contacts and conversations, on the patient with cancer.

## MATERIALS AND METHODS

The Masonic Memorial Hospital is a unit separate from the main University Hospitals, connected to the main hospital by a tunnel. By the nature of its facilities it has been termed a "parahospital." It contained 80 beds at the time of the study but was subsequently enlarged to 120 beds. The patients encompass a broad economic sample and include county welfare patients, per diem patients (who pay for hospital expenses but not for the professional services of the staff), and private patients. The average patient stay is twenty-two days. The hospital's dietary division, although working in close cooperation with the main University Hospitals' dietary department, operates as an independent unit with its own storeroom and dishwashing furnished with central pedestal tables in order to accommodate ambulatory and wheelchair patients. There is a 20-ft. cafeteria line with hot and cold serving portions where ambulatory patients on general diets serve themselves. All semiambulatory patients or patients with special diets are served meals at their tables by the dietary personnel. All other patients in the hospital are served in their rooms from portable hot carts.

The study was conducted from July 1 through July 31, 1967, and all patients admitted to the Masonic Memorial Hospital or present there during that time were interviewed; their charts were examined; and the patient was accepted, rejected, or deferred from the study. The month's sampling included a beginning census of 66 patients, 63 direct admissions, and 30 transfers from the University Hospitals for a total of 159 patients. The average daily census for the month was 57 with 34% of the patients eating their meals in the patient dining room. During the previous two years of operation the dining room had served an average of 37.1% of the hospital's patients, with monthly fluctuations ranging from 20.3 to 50.7%.

All patients who ate their meals in the dining room for a period of seven days were given a 26-question attitude questionnaire. This form contained questions relating to several aspects of the dining room facility as well as to the hospital in general. The entire group included new patients who were admitted or who were present during the month as well as those who had previously been patients of the Masonic Memorial Hospital.

In an attempt to assess the effect of the dining room experience on patients' morale, mental health, and maturity of ideas about cancer, certain patients were selected for special study. This group included those patients admitted for the first time to this hospital between July 1 and July 31. These patients were interviewed within three hours of their admission to the hospital. They were given the Minnesota Multiphasic Personality Inventory (MMPI) in their rooms and a 29-item sentence completion form which was developed by the investigators. The responses to this sentence completion form were given orally to the interviewer (D.C.G.). Both the sentence completion form and the MMPI were completed within two days of admission, and no patients were allowed to eat in the dining room until both were finished, their meals being served in their rooms. Those patients unable to complete the MMPI in two days were dropped from the special study. Ten days after their admission the study group was again given the sentence completion form and the MMPI as well as the attitude questionnaire described above. Thus, two sets of MMPIs and sentence completion forms were gathered from each patient whether he ate in the dining room or was served his meals in his room.

## RESULTS

*Patients' attitudes toward the dining room.* Of the 159 patients catalogued, 56 patients were rejected from this aspect of the study because they were too ill or noncommunicative or were dying. An additional 59 patients were discharged before completing a seven-day exposure to the dining room, thus leaving 44 study patients, 29 of whom ate in the patient dining room for at least seven days. Fifteen patients who were not using the dining room but were well enough to give meaningful responses answered the first 6 questions on the attitude questionnaire which applied to all patients. The answers received to the questionnaire along with pertinent patient comments were analyzed.

1. *Do you know about the dining room for patients?*

   Only one of the 44 patients completing this question said that he was unaware of the dining room.

2. *Have you ever eaten in the dining room?*

   As stated above, 29 patients were currently eating in the patient dining room. Of the remaining 15 patients who completed this question, 7 had eaten in the dining room on a previous visit to the hospital. Their answers to the final 20 items on the questionnaire were not recorded, since a standardized, recent exposure was desired.

3. *Do the nurses encourage you to eat in the dining room?*

   Of the 44 patients, 23 or 52% responded "yes" to this question. All but 1 of the patients said that the nurses had made them aware that the facility was available. Only 5 of the 15 patients not using the dining room responded "yes" to this question, while 18 or 62% of the 29 eating in the dining room said that the nurses encouraged them to do so.

4. *Do (or would) you prefer to eat in the dining room?*

   All of the dining room patients and one-third of the non-dining room patients said that they would prefer to eat in the dining room. Three of the dining room patients stated that they chose not to go whenever they had feelings of nausea.

   Patients' comments included:

   "I didn't want to go at first, but my roommate encouraged me. I love it now."

   "I'm from a big family and used to eating with lots of people."

   "You get 'room claustrophobia.'"

5. *Do you usually eat everything on your tray?*

   All but two of the dining room patients responded "yes" to this question—thus 93%—while only 6 or 40% of the 15 non-dining room patients responded "yes."

6. *Would you prefer having a private room?*

   Twenty-one percent of the patients eating in the dining room responded "yes" to this question, while 33% of those eating in their rooms answered affirmatively.

The remaining 20 questions were answered only by those 29 patients who had been eating in the patient dining room.

7. *Which meals do you eat in the dining room?*

   Two patients stated that they preferred having breakfast served in their rooms. The remaining patients all stated that they ate all three meals in the dining room.

8. *How do you go to the dining room?*

   Among the study group were 2 patients who went to the dining room in wheel chairs (1 with help). The remaining 27 patients all walked to the dining room unassisted (those on the second floor of the hospital took the elevator).

9. *What do you wear to the dining room?*

   The initial policy for the operation of the dining room suggested that patients would be allowed to wear robes to breakfast and lunch but that all patients should dress for dinner. Only 2 of those patients studied were following this policy. Another 2 patients stated that they dressed for lunch and dinner, while 4 wore street clothes to all meals. The remaining 21 patients or 72% said that they wore their robes to all three meals.

10. *What should patients wear to the dining room?*

    All patients but one stated that patients should be allowed to wear whatever they chose. The patient said that patients should be strongly encouraged to dress for lunch and dinner. She said, "When you are dressed you feel more like a person and not so much like a patient."

11. *How are you served in the dining room?*

    Of the patients interviewed, 22 or 76% walked through the cafeteria line and selected their own meals. Only 7 were served at their tables by the dietary personnel.

12. *Do you usually sit in the same chair?*

    Of the 29 patients, 23 or 80% stated that they usually sat in the same chair. All patients interviewed said that they usually tried at least to sit at the same table.

    Patients commented:

    "At first I couldn't seem to get located. Once I sat in someone else's chair but now I have found my spot."

    "One woman doesn't have many friends so my roommate and I usually sit with her."

13. *Do other patients usually sit in the same chairs?*

    All patients interviewed responded "yes" to this question and most stated that they were always careful to respect prior rights to a chair.

14. *What do you frequently talk about in the dining room?*

    Patients were given 5 topics and allowed to choose as many as they desired. The disclosure of other topics was also encouraged. The 5 alternatives are listed below together with incidence of choice as a frequent conversation topic.

| | |
|---|---|
| 1] The doctors | 14% |
| 2] The nurses | 10% |
| 3] The food | 48% |
| 4] Your illness | 72% |
| 5] Others' illnesses | 86% |

Patient comments included:

"I only talk about my illness when asked directly."

"I don't talk to other patients. I'm not much of a conversationalist."

"Most patients talk extremely intelligently about their treatments."

"The first question they always ask you is 'what are you here for?' Once they get that established they can move on to lighter topics."

15. *Are you bothered by the appearance of other patients?*

Although only 2 patients responded "yes" to this question, 4 mentioned a man with considerable facial involvement with cancer who bothered them but stated that they didn't see him anymore. Most patients seemed to have little difficulty tolerating the usual bandages and chemical therapy alopecia, but there seemed to be a certain degree of outward manifestation of disease above which even the most tolerant patient could not help but be bothered.

16. *Have you made friends in the dining room?*

All patients answered "yes" to this question.

17. *How long do you usually stay in the dining room?*

Fifty-five percent of the patients stated that they usually stayed about thirty minutes. The remaining patients were equally divided between the choices of fifteen minutes and forty-five minutes. Thus, an average stay of thirty minutes can be computed.

18. *Where do you usually go from the dining room?*

Fifty-nine percent of the patients answered that they returned directly to their rooms. Five patients sat in the lounge, and the remainder walked in the halls or sat on the sun terrace.

19. *Do your friends or relatives ever have coffee with you in the dining room as allowed by hospital policy?*

Fourteen patients or 48% answered "yes" to this question. All but two felt that the hospital policy against visitors eating meals in the dining room was a good policy.

20. *Do you enjoy the dining room facility?*

All patients interviewed in this group responded "yes" to this question.

21. *Do you think the concept of a patient dining room is a good one?*

Again all patients answered "yes." Their comments included:

"You eat more and feel better."

"The atmosphere improves your appetite. "

"It's a great lift. You don't feel so confined."

"You find out that you're not the only one who is sick."

22. *Would you be upset by children with cancer using the dining room?*

It was explained to the patients that part of the expansion of the Masonic Memorial Hospital was to include children and that the hospital administration had the choice of including them in the present dining room or putting them in a dining room of their own. Sixty-five percent of the patients said that they themselves would not be upset by the children.

Those patients who said that they would be upset commented:

"I'm extremely sensitive to children suffering."

"'Annoyed' perhaps is a better word and a little homesick for my own children."

"I love children but it would be too heart rendering to see them with cancer."

"It would just tear me up."

23. *Do you think children with cancer should use the dining room?*

While 65% stated above that they would not be upset by children, only 31% said that the children should use the facility.

Reasons were diverse on both sides of the issue:

"Most patients would enjoy the association but it might disturb older patients, therefore, 'no.'"

"Older people would get a kick out of seeing them, therefore, 'yes.'"

"Yes, my own children enjoy eating more with older people than by themselves."

"For the children's sake, no."

"It would bring comfort to all patients. I'm a minister's wife and I often take my own childen to visit parishioners in the hospital."

"For the good of young mothers in the hospital whose pity would go out to the children, no."

24. *Do you have any suggestions to improve the dining room?*

Only six patients offered suggestions which were:

"The food is too light. I still feel hungry."

"I miss meat at breakfast."

"Patients with nausea should not be allowed to go to the dining room."

"Music would be nice."

"The food is removed from the steam tables too soon."

"The girls who clean up the tables shouldn't make patients feel rushed."

However, far more patients volunteered favorable comments about the facility and the courteousness of the dietary personnel.

The following two questions were included to elicit patient reactions toward a proposed rooftop sun terrace to supplement a street level patio. This cement terrace is located at ground level near the front entrance to the hospital and close to the sidewalk and street. Although not directly related to the dining room facility, the sun terrace is another attempt to allow patient socialization in a pleasant atmosphere.

25. *Have you used the sun terrace in front of the hospital?*

Seventy-six percent of the patients had used the street level sun terrace at some time during their stay.

26. *Would you prefer: (a) sidewalk privileges? (b) street level sun terrace? (c) rooftop sun terrace? (d) no preference.*

Only 1 patient stated that he enjoyed walking on the sidewalks, while 41% said that they would prefer the street level sun terrace to the rooftop, and 39% had no preference. Five patients knew that they would prefer the rooftop, and most patients felt that they really should reserve comment until the rooftop facility was completed.

Comments included:

"I like the activity of the street."

"If confined to your robe, it might be better to be on the roof."

"The roof would be closer to the sun and a little more private. To the rest of the world passing by we are an oddity."

*The effects on patients of exposure to the dining room.* Twenty-seven patients were given the MMPI and the sentence completion form on their first day in the hospital. The sentence completion form included the following items:

1. I am at my best when
2. Most women with cancer
3. This place
4. I am afraid
5. My body
6. The other people around me
7. Things taste best when
8. I get angry
9. A person with cancer must
10. My particular illness
11. When I'm around other people
12. My food
13. Most Masonic doctors
14. Five years from now
15. I get embarrassed when
16. The worst thing about being sick
17. I feel guilty
18. The future
19. I feel down in the dumps
20. Cancer
21. My mind
22. One must never
23. Telling ones troubles to others
24. I feel happiest when
25. The nurses at Masonic
26. Most men with cancer
27. Suicide
28. When I'm eating
29. Dr. . . . .

All patients in this group completed the sentence completion form aloud to the interviewer within three hours of admission. However, 9 patients were unable to finish the card-box MMPI within two days and were dropped from this aspect of the study. Of the 18 completing the first battery, 9 were to go on and finish the tests a second time, ten days after admission. Of the group not finishing the second battery, 5 were discharged before the tenth day, 2 patients became too ill, and 2 patients simply refused to do the MMPI again.

The sentence completion form proved to be a less effective investigative tool under these circumstances than had been hoped. It was effective in measuring maturity of ideas about cancer (as demonstrated in patient 4, below). However, on the whole it merely echoed the finding of the MMPI, but with less reliability, in part because of the patients' attempts to present a picture of serenity and composure to the interviewer.

From the results of clinical evaluation of the MMPIs and sentence completion forms it was evident that between the two periods of test administrations (see table) all but 1 of the patients showed improvement or no change in the psychological parameters measured by the study. Most patients showed either a decrease or no change in depression level. Only 1 patient showed a rise in level of depression. She was the only noncancer patient in the study, the diagnosis being postsurgical recurrence of low back pain. Similarly, all patients showed a drop or no change in level of social introversion. The ego strength rose or remained unchanged in every patient and, further, the anxiety level dropped in every patient as measured by a research scale of the MMPI. Six of the 9 patients showed some psychopathology on the first administration, while only 3 did so subsequently.

This record of improvement was shared equally by the two patients in this portion of the study who ate their meals in their rooms and thus acted as a control group in measuring the psychological effect of dining room participation. Both non-dining room patients showed drops in levels of depression, social introversion, rises in ego strength, and absence of psychopathology with the second administration.

## CASE REPORTS

*Case 1.* This patient was a 37-year-old mother of 5 who was admitted to the Masonic Memorial Hospital for therapy of advanced cancer of the stomach. She remained in the hospital fifteen days and completed the second battery of tests after nine days of dining room eating. On admission she showed moderate depression and anxiety along with reduction of level of activity and drive. She did not show hypochondriacal concern and her depression and anxiety tended to be relatively pure and unmixed with other psychopathology. On the sentence completion form she referred frequently to home, and she felt that most women with cancer "are pretty depressed."

At the time of the second testing period the changes were dramatic and significant. The depression and anxiety had almost completely disappeared. The level of activity had risen markedly. Her tendencies toward withdrawal and introversion were greatly reduced. She now felt that most women with cancer "are individuals—quite brave and not at all downhearted." In short, her change was one from a depressive reaction to a relatively normal personality adjustment.

*Case 2.* This 43-year-old married man, the father of one child, had metastasis stemming from a carcinoma of the hepatic flexure of the colon and was at the Masonic Memorial Hospital for arterial infusion with 5-fluorouracil. He was a patient at the hospital for fourteen days and acquired eight days of experience with the patient dining room. On admission he showed marked and severe depression and anxiety along with a reduction in

DINING ROOM ATTENDANCE AND LEVELS OF PSYCHOLOGICAL CHARACTERISTICS

| Patient | Depression | | | Social introversion | | | Ego strength | | | Psychopathology | | Dining room attendance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Initial* | *Subsequent* | *Change* | *Initial* | *Subsequent* | *Change* | *Initial* | *Subsequent* | *Change* | *Initial* | *Subsequent* | |
| 1 | Moderate | Normal | Drop | High | Moderate | Drop | Normal | Normal | Unchanged | Present | None | Yes |
| 2 | Severe | Severe | Unchanged | Very high | High | Drop | Very low | Very low | Unchanged | Present | Present | Yes |
| 3 | High | Moderate | Drop | Moderate | Normal | Drop | Low | Normal | Rise | Present | None | No |
| 4 | Normal | Normal | Unchanged | Normal | Normal | Unchanged | Normal | Moderate | Rise | None | None | Yes |
| 5 | Severe | Severe | Unchanged | High | High | Unchanged | Normal | Normal | Unchanged | Present | Present | Yes |
| 6 | Moderate | High | Rise | Low | Low | Unchanged | Normal | Normal | Unchanged | Present | Present | Yes |
| 7 | High | Normal | Drop | Normal | Low normal | Drop | Normal | High | Rise | Present | None | No |
| 8 | Normal | Normal | Unchanged | Very low | Very low | Unchanged | Normal | Moderate | Rise | None | None | Yes |
| 9 | Normal | Normal | Unchanged | High | Low | Drop | Normal | High | Rise | None | None | Yes |

level of activity and energy. He presented numerous physical complaints and maintained a passive and yielding orientation. His self-concept was low and his social orientation tended to be introverted and withdrawn. The only significant changes between the two administrations of the test sets were a reduction from severe social introversion and withdrawal to moderate social introversion and withdrawal. When asked if he thought the patient dining room was a good concept he replied, "If you have the ability to mingle it gives you the chance, but I'm not much good at that."

*Case 3.* The patient, a 53-year-old mother of 3, entered the Masonic Memorial Hospital with metastatic breast cancer involving the cervical spine. She was started on radiation therapy and from the onset chose to have her meals served in her room. On admission she was a mild-to-moderate neurotic patient with largely depressive and hypochondriacal trends. Mild anxiety was present. After ten days of eating her meals in her private room, contacted only by the hospital staff, she showed a significant drop in the level of introversion. She showed a rise in ego strength suggesting an improved self-concept and a greater willingness to interact with other people. She also showed a marked drop in anxiety level. In summary, during the nineteen days she changed from a somewhat self-centered, self-pitying, hypochondriacal neurotic person with some depression to a more or less normally adjusted individual.

*Case 4.* This patient was a 29-year-old mother of 5 with stage 4 Hodgkin's disease. She finished the second battery of tests after seven days of eating in the dining room. Both MMPIs were within normal limits and both were free from depression and anxiety. Both suggested a rather well-controlled, somewhat hysteroid person. The only change of significance in the two MMPIs was a rise in the second test in the level of self-acceptance and self-confidence. Her sentence completions, however, showed a marked maturation of ideas about cancer as the following six sets of sentences will testify.

*Initial:* Most women with cancer—I don't know too much about.

*Final:* Most women with cancer—take it pretty good.

*Initial:* I am afraid—of being here.

*Final:* I am afraid—not of much. It used to frighten me when they all talked about their illnesses. I'd come upstairs and wonder if it was all over me. But I soon learned that I couldn't have all those things and that I must be in good hands.

*Initial:* The other people around me—I guess are depressed.

*Final:* The other people around me—some are nice and happy, others are sad and depressed.

*Initial:* My particular illness—I don't know too much about.

*Final:* My particular illness—I know can be controlled.

*Initial:* The worst thing about being sick—is that it's depressing.

*Final:* The worst thing about being sick—is the anticipation.

*Initial:* Telling one's troubles to others—only makes them worse.

*Final:* Telling one's troubles to others—helps, especially people here who know what it is. I can tell people here things that my own relatives won't talk about and can't understand.

## DISCUSSION

A patient dining room has a significant therapeutic role in improving the patient's mental outlook, psychological health, and maturity of ideas about cancer. The current study evaluated the reaction of patients to a communal dining room in a hospital devoted primarily to the care of patients with advanced cancer. Concomitantly, a measurement was made of the effect of the dining room on the patients.

For many patients the communal patient dining room offers a welcome spot for conversations and social contacts. The majority of responses from those using the dining room indicate that patients' reasons for preferring the dining room to tray service relate largely to the activity and socialization involved. The opportunity to leave their rooms and be on their own and the availability of conversation with patients with similar diseases definitely seem to build the morale of many. However, it is naive to assume that all cancer patients can benefit from experiences in the dining room. Similarly, it cannot be assumed that socialization with other patients, whether in a patient dining room or elsewhere, is the only avenue available for psychological improvement and maturation of ideas.

The behavior of cancer patients "should be considered as designed to prevent, avoid, minimize or repair injury, not merely to a part of the body or to the body itself, but also to the basic patterns and their inevitable, wide social implications. The behavior and concurrent emotions are appropriate to the state the patient perceives himself to be in. They may be realistically inappropriate or less than optimal."[3] A frequent reaction of cancer patients is "identification with a patient they have previously known with the same sort of illness. It appears possible that this is an economic method of handling the information. Instead of having to puzzle out for themselves a series of predictions as to the possible future course of the illness, they have the whole thing worked out for them in terms of past experience with an acquaintance or relative."[6] Experiences in a patient dining room apparently quickly eliminate much of this tendency. The patient suddenly finds himself in the midst of 30 to 40 other cancer patients with a wide diversity of illnesses, complaints and states of well-being, and it is virtually impossible to identify with all of them.

Furthermore, certain patients are often aware of their dependency on others. "The very high value put in our civilization on self-sufficiency and helping others, but not relying on others, makes it most difficult to accept the dependent role. Restoration of a measure of independency and self-sufficiency is basic to the rehabilitation of these patients."[3] A patient dining room can work effectively in this regard.

Still other patients with tendencies toward withdrawal and depression need necessary activities. Here again the patient dining room at the Masonic Memorial Hospital has seemed to prove effective by introducing "social necessities in the everyday living pattern"[5] as well as socialization which takes the patient "out of himself and his troubles."[2]

The current study measured the therapeutic effect of the whole cancer parahospital setting. The advantages of a total facility devoted to a subacute level of care and complete truthfulness with cancer patients allow interactions between the staff and patients which are truly unique. In this regard, the patient dining room, while of primary importance in the improvement of some patients, must be considered as just one part of the total therapy afforded.

There is no standard cancer patient. Therefore, while some can benefit from socialization with other patients, others profit more from a nursing staff which is unafraid to confront cancer. Whether his need is to be independent, to participate in group activities, or simply to discuss his problems with an open and understanding staff member, we must not underestimate the capacity of the cancer patient to adapt to his condition. Rather, it is up to the men of medicine to provide a total setting in which the patient's own special medical and psychological needs can be met, a setting such as the cancer parahospital.

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# Congenital Coarctation of the Abdominal Aorta

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In contrast to the more common occurrence of subisthmic coarctation of the thoracic aorta, coarctation of the abdominal aorta is rare, and only 77 cases of congenital coarctation of the abdominal aorta have been reported since 1843. The purpose of this report is to review these cases and add one not previously reported in an attempt to delineate diagnostic clues, pathologic anatomy, methods of therapy, and results of treatment.

The distinction between congenital and acquired stenosis or coarctation of the abdominal aorta at times may be difficult to make since varying degrees of atherosclerosis, intimal and medial thickening, and adventitial fibrosis are often observed adjacent to the site of congenital coarctation in young adults. In such cases, the degenerative vascular lesions are produced secondarily as a result of turbulence at the site of obstruction. The degenerative process, however, may be primary and progress to the extent of nearly complete occlusion of the aorta which may appear almost identical to that of a congenital coarctation. While such an occurrence is uncommon in the thoracic aorta, it is not rare in the abdominal aorta. Such degenerative changes occur most frequently at the bifurcation but are known to occur elsewhere in the abdominal aorta.

The distinction between congenital and acquired abdominal aortic coarctation therefore involves more than study of anatomic and pathologic changes in the involved vessel and includes consideration of age, duration of symptoms, presence or absence of additional sites of stenosis, and, if possible, therapy. Endarterectomy as a method of therapy, for example, is unlikely to be applicable to the congenital coarctation and, consequently, all cases reported as having been

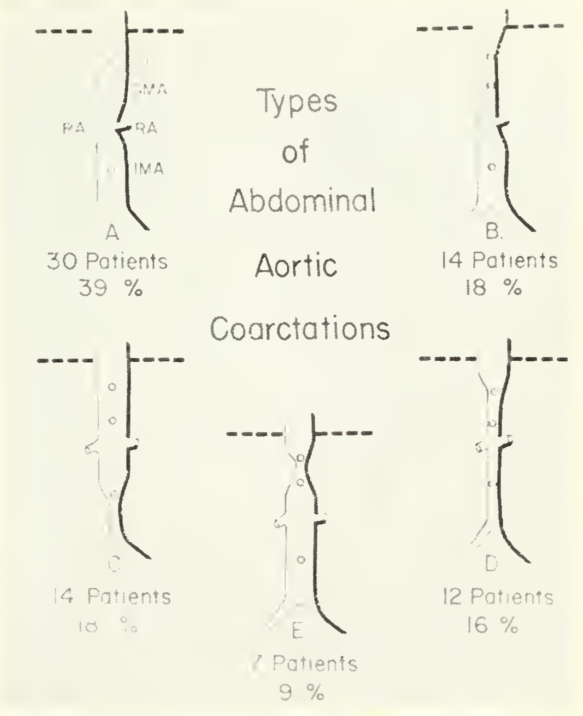

Fig. 1. Types and incidence of abdominal aortic coarctation

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treated in this manner are arbitrarily not included in this report. In addition, no cases with evidence of degenerative changes in vessels remote from the site of abdominal aortic coarctation are included herein.

### DIAGNOSIS

In contrast to coarctations of the subisthmic thoracic aorta which more frequently occur in males, coarctations of the abdominal aorta occur more frequently in females; 42 (53%) patients are females and 32 (41%) are males. In 4 instances (6%), sex is not stated. The age of the patients at the time of diagnosis ranges from 1 to 77 years, with the greatest number being between 15 and 35 years.

Formerly, the diagnosis of abdominal aortic coarctation was made most frequently at autopsy but, with increasing awareness of the possible causes of hypertension, the diagnosis is now made earlier and, consequently, fewer cases are first discovered at autopsy. Hypertension in the arms with weak or absent femoral pulsations is an almost invariable finding, although in 3 patients hypertension in the arms was absent, and in 2 other patients hypertension was also present in the legs. Rarely, vigorous epigastric and femoral pulsations are present. The presence of hypertension in the arms with weak or absent femoral pulsations and palpable epigastric pulsations allows localization of the stenotic aortic segment to the abdomen. Earlier reports only occasionally mention the presence of intermittent claudication and an abdominal or lumbar bruit, but recently these findings are more frequently reported to be present. Thus, on the basis of physical examination alone, one may suspect the presence of a coarctation of the abdominal aorta.

Chest films occasionally reveal scalloping of the rib margins, a finding more frequently observed in thoracic aortic coarctations. Scalloping, if present, is usually observed in the lower four ribs rather than the upper ribs. Retrograde aortography proves reliable in substantiating the diagnosis of abdominal aortic coarctation and in localizing the stenotic aortic segment.

### PATHOLOGIC ANATOMY

The most common type of abdominal aortic coarctation is a short segment in the immediate vicinity of the renal arteries; this is reported in 30 cases (39%) and often involves the origin of one or both renal arteries. Next in frequency is a longer area of stenosis between the diaphragm and renal arteries; this is reported in 14 cases (18%) and often involves the origins of the celiac axis, superior mesenteric, and one or both renal arteries. Occurring just as frequently as the latter type is that of an extensive narrowing distal to the renal arteries (14 cases or 18%). Seven patients (9%) have a short stenotic segment in the immediate vicinity of the celiac axis and 12 (16%) have atresia or hypoplasia of the entire

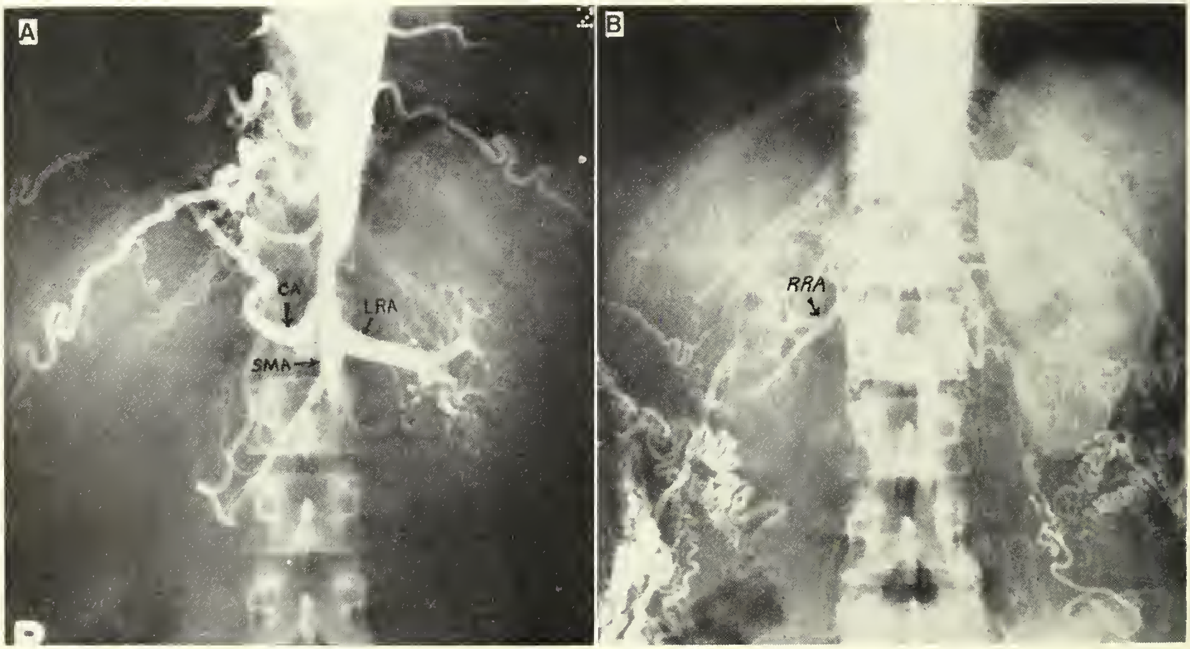

Fig. 2. Coarctation of abdominal aorta: [A] early and [B] late films of patient in Case 78. CA: Coliac axis. SMA: Superior mesenteric artery. RRA: Right renal artery. LRA: Left renal artery.

## TABLE 1

### COARCTATION OF THE ABDOMINAL AORTA

| *Case* | *Author* | *Description of coarctation* | *Operation* | *Result* |
|---|---|---|---|---|
| 1 | Duncan, 1843 | Not stated | None | |
| 2 | Quain, 1848 | Immediately below renal arteries, ½ in. in length | None | |
| 3 | Power, 1861 | Began below visceral branches and extended distally to include common iliac arteries | None | |
| 4 | Maycock, 1937 | Began 1.5 cm. below renal arteries, 3 cm. in length, inferior mesenteric and ovarian arteries arose from coarcted area | None | |
| 5 | Baylen, 1939 | Localized immediately below renal arteries | None | |
| 6 | Kerr, 1947 | Immediately proximal to renal arteries, length not stated | None | |
| 7 | Bahnson, 1949 | At level of L2 (level of renal arteries) length not stated | Denervation of left renal artery, left renal omentpexy-L2-4, ganglionectomy | No benefit |
| 8 | Wang, 1949 | Began 3 mm. above renal arteries, 1.5 cm. in length | None | |
| 9 | Steele, 1941 | At level of renal arteries, length not stated | None | |
| 10 | Steele, 1949 | Immediately below diaphragm, 4 in. in length | None | |
| 11 | Kondo, 1950 | Between celiac axis and renal arteries, length not stated | None | |
| 12 | Doumer, 1951 | At level of renal arteries, length not stated | Left nephrectomy | No benefit |
| 13 | Goldzieher, 1951 | At level of renal arteries, length not stated | Laparotomy only | No benefit |
| 14 | Fisher, 1952 | Localized at level of renal arteries | Right nephrectomy | Died four days after operation |
| 15 | Glenn, 1952 | Immediately proximal to celiac axis, 10.5 cm. in length | (a) Bilateral lumbar sympathectomy<br>(b) Spleno-aortic bypass | No benefit<br>Good |
| 16 | Patel, 1953 | Began at level of renal arteries, extended distally to include common iliac arteries | Spleno-aortic bypass | Died five days after operation |
| 17 | Froment, 1952 | Localized between L1 and L2 (level of renal arteries) | None | |
| 18 | Albanese, 1953 | Began immediately below diaphragm, extended to level of renal arteries, all visceral branches arose from stenotic segment | Aorto-aortic bypass homograft | Died ten weeks after operation |
| 19 | Nuboer, 1954 | Immediately below renal arteries, 2 cm. in length | Resection and homograft | No benefit |
| 20 | Cooley, 1954 | At level of celiac axis, that vessel being a fibrous cord 3 cm. in length; also separate thoracic coarctation | Resection and homograft | Good |
| 21 | Kaufman, 1955 | Began immediately below renal arteries, extended distally to level of inferior mesenteric artery, 4 cm. in length | None | |
| 22 | Paramonow, 1955 | Localized to level of L2-3 (level of renal arteries) | Renal omentopexy | No benefit |
| 23 | O'Sullivan, 1955 | Localized to level of L1 (level of renal arteries, both of which were hypoplastic) | (a) Thoracotomy only<br>(b) Laparotomy only | No benefit<br>No benefit |
| 24 | Ritchie, 1959 | Began immediately below renal arteries, extended distally to include common iliac arteries | Bilateral lumbar sympathectomy | No benefit |
| 25 | Miettinen, 1956 | Began immediately beneath diaphragm, extended distally through entire length of aorta | Laparotomy only | No benefit |
| 26 | Inmon, 1956 | Began immediately below renal arteries, extended distally through entire length of aorta | None | |
| 27 | Gustavino, 1956 | Began immediately above diaphragm, extended distally to immediately above celiac axis, 8 cm. in length | Resection and homograft | Good |

TABLE 1—(Continued)

COARCTATION OF THE ABDOMINAL AORTA

| *Case* | *Author* | *Description of coarctation* | *Operation* | *Result* |
|---|---|---|---|---|
| 28 | Bunnag, 1957 | Began at level of L2 (level of renal arteries), extended 4 cm. distally to level of inferior mesenteric artery | None | |
| 29 | Trench, 1957 | Upper abdominal, length not noted | Laparotomy only | No benefit |
| 30 | Gliedman, 1957 | Infrarenal with distal aneurysm, length not stated | None | |
| 31 | Gliedman, 1957 | Infrarenal with distal aneurysm, length not stated | None | |
| 32 | Schwartz, 1957 | Entire abdominal aorta | Thoracotomy only | No benefit |
| 33 | Kusui, 1957 | Began at level of renal arteries, extended distally to bifurcation of aorta | None | |
| 34 | Sato, 1958 | Began 10 cm. above diaphragm, extended distally to level of renal arteries | None | |
| 35 | Gerbasi, 1958 | Began at level of L1, extended 3 cm. distally to 2 cm. above renal arteries, celiac axis arose from stenotic segment | (a) Thoracotomy only<br>(b) Aorto-aortic bypass homograft | No benefit<br>Good |
| 36 | Loogen, 1958 | Between celiac axis and renal arteries, 7 cm. in length | (a) Bilateral adrenalectomy and splanchnicectomy<br>(b) Laparotomy only | No benefit<br>No benefit |
| 37 | Mann, 1958 | Entire abdominal aorta and common iliac arteries | Laparotomy only | No benefit |
| 38 | Shapiro, 1959 | Began at level of celiac axis, extended distally to bifurcation of aorta, both renal arteries stenotic at origins | Thoracotomy only | No benefit |
| 39 | Milroy, 1959 | Lower thoracic and upper abdominal aorta stenosed above level of all visceral branches | Laparotomy only | No benefit |
| 40 | Milroy, 1959 | Began 1 in. above level of diaphragm, extended 7 cm. distally to below level of renal arteries | Aorto-aortic bypass homograft, left nephrectomy | Good |
| 41 | Morris, 1959 | Entire descending thoracic and abdominal aorta stenosed, 30 cm. in length | Laparotomy only | No benefit |
| 42 | Morris, 1959 | Localized to level of renal arteries, 2 cm. in length, renal arteries 3 mm. in diameter | (a) Thoracotomy only<br>(b) Aorto-aortic homograft bypass | No benefit<br>Died twelve hours after operation |
| 43 | Morris, 1959 | Began at level of diaphragm, extended to below level of renal arteries, 2 cm. in length | Left subclavian to homograft to aorta bypass | Died seven hours after operation |
| 44 | Morris, 1959 | Localized to immediately above superior mesenteric and renal arteries, 3 cm. in length | Aorto-aortic bypass with Dacron graft | Good |
| 45 | Hansen, 1959 | Began 2 cm. above diaphragm, continued 6 cm. distally; celiac axis, superior mesenteric, and both renal arteries arose from stenotic segment | Aortoplasty with homograft strip | Good |
| 46 | Brust, 1959 | Localized below level of renal arteries, both renal artery orifices reduced in size | Nephrectomy | Died three weeks after operation |
| 47 | Brust, 1959 | Localized 2 cm. above level of renal arteries, celiac axis occluded and renal artery lumina reduced in size | None | |
| 48 | D'Abreu, 1959 | Began in thorax at level of T8, continued distally for 20 cm. to immediately below level of renal arteries, celiac axis, superior mesenteric, and renal arteries reduced in size | (a) Lumbar sympathectomy<br>(b) Aorto-aortic bypass homograft | No benefit<br>Good |
| 49 | D'Abreu, 1949 | Localized at level of renal arteries, 2.5 cm. in length | Spleno-aortic bypass homograft | Good |
| 50 | Kotori, 1959 | Localized between celiac axis and renal arteries | Aorto-aortic bypass graft | Unknown |

TABLE 1—(Continued)
COARCTATION OF THE ABDOMINAL AORTA

| *Case* | *Author* | *Description of coarctation* | *Operation* | *Result* |
|---|---|---|---|---|
| 51 | Inada, 1960 | Localized at level of L1 immediately below level of renal arteries, mild narrowing of distal aorta, separate thoracic coarctation at level of T11 | None | |
| 52 | Stokes, 1960 | Aorta narrowed below level of superior mesenteric artery, renal arteries arose from narrowed segment, aorta of normal caliber below level of renal arteries | (a) Laparotomy only<br>(b) Bypass graft, left renal artery to distal aorta<br>(c) Bypass graft, right renal artery to distal aorta<br>(d) Right nephrectomy | No benefit<br>Moderate improvement<br>No further improvement<br>Good |
| 53 | Senning, 1960 | 6 cm. in length, involved origins of celiac, superior mesenteric, and both renal arteries | Aortoplasty with strip | Good |
| 54 | Senning, 1960 | Coarctation at level of diaphragm, hypoplasia distal to level of renal arteries | Aorto-aortic bypass graft | Good |
| 55 | Pyorala, 1960 | Diffuse narrowing below level of renal arteries, extended distally to bifurcation | None | |
| 56 | Horky, 1960 | Isolated segment between T11 and L1 (between diaphragm and celiac artery) | Aorto-aortic bypass graft | Good |
| 57 | Dillon, 1961 | Localized constriction beginning at celiac axis, extending 2 cm. distally | Aorto-aortic bypass graft | Good |
| 58 | Basu, 1961 | Began at level of diaphragm, extended distally to level of renal arteries, 7 cm. in length | None | |
| 59 | Nemirovskoya, 1961 | Localized immediately below renal arteries, aneurysms of both renal arteries | None | |
| 60 | Sondergaard, 1961 | Entire aorta between diaphragm and femoral arteries hypoplastic, both renal arteries stenosed at origin | (a) Thoracotomy only<br>(b) Strip graft between celiac and inferior mesenteric arteries | No benefit<br>Good |
| 61 | Inada, 1962 | Entire abdominal aorta hypoplastic | None | |
| 62 | Inada, 1962 | Entire abdominal aorta hypoplastic | None | |
| 63 | Kittridge, 1962 | Isolated narrowing at level of renal arteries | None | |
| 64 | Stagoni, 1962 | Aplasia of aorta between renal artery and iliac artery, left renal and inferior mesenteric arteries absent | Splenic artery to homograft to iliac artery bypass graft, left nephrectomy | Death |
| 65 | Düx, 1962 | Localized between origin of renal arteries, stenosis at origin of right renal artery | Resection of stenotic segment of right renal artery | Unknown |
| 66 | Brukin, 1962 | Localized at level of renal arteries, left renal artery hypoplastic, second coarctation at L3-L4 | Nephrectomy | Good |
| 67 | Bloor, 1963 | Began below superior mesenteric artery, distal extent not stated, left renal artery arose from narrowed segment | Laparotomy only | No benefit |
| 68 | Schuster, 1963 | Isolated segment immediately above renal artery | (a) Thoracotomy only<br>(b) Aorto-aortic bypass graft | No benefit<br>Good |
| 69 | Schuster, 1963 | Isolated segment between origins of renal arteries | Aorto-aortic bypass graft, inferior mesenteric artery to left renal artery bypass | Good |
| 70 | Stansel, 1964 | Isolated membrane at origins of both renal and superior mesenteric arteries | Excision of membrane and patch graft | Good |
| 71 | Bjork, 1964 | Began at celiac axis, extended to inferior mesenteric artery, right renal artery stenotic at origin and arose from narrowed segment | (a) Aorto-aortic bypass graft<br>(b) Right nephrectomy | No improvement<br>Moderate improvement |
| 72 | Baird, 1964 | Began immediately above celiac artery, ended immediately below celiac artery, distal thoracic and abdominal aorta hypoplastic, both renal arteries small and superior mesenteric artery occluded, aneurysm below renal arteries | Resection of aneurysm (end-to-end graft), bypass graft (lower thoracic aorta to abdominal aorta), bypass graft (thoraco-abdominal graft to left renal artery) | Moderate improvement |

TABLE 1—(Continued)

COARCTATION OF THE ABDOMINAL AORTA

| *Case* | *Author* | *Description of coarctation* | *Operation* | *Result* |
|---|---|---|---|---|
| 73 | Robicsek, 1965 | Between diaphragm and renal arteries, involved origins of celiac and superior mesenteric arteries | (a) Laparotomy only<br>(b) Aorto-aortic bypass graft | Good<br>Good |
| 74 | Robicsek, 1965 | Localized constriction, 2 cm. in length, immediately below inferior mesenteric artery | Resection and graft | Good |
| 75 | Robicsek, 1965 | Began immediately below celiac, extended distally to include both iliac arteries, involved origins of all visceral branches | Laparotomy only | No benefit |
| 76 | Bücheler, 1966 | Hypoplasia of the entire abdominal aorta, stenosis of both renal arteries | None | |
| 77 | Ludin, 1966 | Localized segment immediately below renal arteries, stenosis of left renal artery | None | |
| 78 | Doderneck | Entire abdominal aorta stenosed, all visceral branches stenotic at origins | (a) Thoracotomy only<br>(b) Left renal arterioplasty<br>(c) Aorto-aortic bypass graft; anastomosis of celiac axis, superior mesenteric, and both renal arteries to graft | No benefit<br>No benefit<br>Moderate improvement |

abdominal aorta. If the entire abdominal aorta is stenosed, visceral branches are similarly reduced in size. In 1 case, the site of coarctation is not described and 2 (3%), have a separate thoracic coarctation.

### THERAPY AND RESULTS

Fifty patients had a total of 65 separate operations, and several patients had more than one procedure performed at the same operation. In 19 patients, exploration was either the only operation performed or the first of two or more operations, but in no instance was amelioration of the hypertension obtained. In 8 patients, nephrectomy, renal omentopexy, or sympathectomy, or combinations thereof, were the definitive procedures performed and, with the exception of one patient, were valueless by themselves in relieving hypertension. In 2 additional patients, lumbar sympathectomy was ineffective in reducing blood pressure prior to performance of a definitive procedure. In 4 other patients, nephrectomy was performed as a part of or after the definitive procedure and was followed by

TABLE 2

RESULTS OF SEPARATE OPERATIONS FOR COARCTATION OF ABDOMINAL AORTA

| | | *Result* | | | | |
|---|---|---|---|---|---|---|
| *Operation* | *No. of patients having procedure* | *Good* | *Moderate improvement* | *No benefit* | *Died* | *Unknown* |
| Thoracotomy | 7 | 0 | 0 | 7 | 0 | 0 |
| Laparotomy | 12 | 0 | 0 | 12 | 0 | 0 |
| Nephrectomy | 8 | 3* | 1† | 1 | 3‡ | 0 |
| Sympathectomy | 5 | 0 | 0 | 5§ | 0 | 0 |
| Omentopexy | 1 | 0 | 0 | 1 | 0 | 0 |
| Aorto-aortic bypass | 16 | 10*,¶ | 3†,**,†† | 0 | 2 | 1 |
| Spleno-aortic bypass | 4 | 2 | 0 | 0 | 2‡ | 0 |
| Subclavian graft, aorta bypass | 1 | 0 | 0 | 0 | 1 | 0 |
| Resection and graft | 4 | 3 | 0 | 1 | 0 | 0 |
| Aortoplasty | 4 | 4 | 0 | 0 | 0 | 0 |
| Renal arterioplasty | 2 | 0 | 1†† | 0 | 0 | 1 |
| Bilateral aortorenal bypass | 1 | 1* | 0 | 0 | 0 | 0 |

*One patient had nephrectomy after staged bilateral aortorenal bypass and another patient aorto-aortic bypass graft.

†One patient had nephrectomy after aorto-aortic bypass graft.

‡One patient died after simultaneous spleno-aortic bypass and nephrectomy.

§One patient had simultaneous sympathectomy, splanchnicectomy, and bilateral adrenalectomy and another patient, sympathectomy and renal omentopexy

¶One patient had simultaneous inferior mesenteric artery to renal artery bypass.

**One patient had simultaneous resection of lower abdominal aortic aneurysm and graft to renal artery from aorto-aortic bypass graft.

††Patient had aorto-aortic bypass graft after renal arterioplasty.

normotension in 2, moderate improvement in 1, and death in 1. Prior to a more definitive operation, 1 patient had left renal arterioplasty without relief of hypertension.

Four patients had resection of the stenotic segment with insertion of a graft and 3 had normal blood pressures after operation. Twenty-one patients had aorto-aortic bypass of the stenotic segment, 16 by means of a plastic graft or homograft, 4 by spleno-aortic bypass, and 1 by a left subclavian artery to homograft to aorta bypass. Three of the 16 patients having aorto-aortic bypass also had nephrectomies. Twelve of these 21 patients were relieved of hypertension after operation and 3 obtained moderate reductions of blood pressure. Four patients had relief of hypertension after aortoplasty. One patient, who had bilateral aortorenal bypass grafting with only slight reduction of blood pressure, became normotensive after right nephrectomy. Thus, only 21 (42%) of the 50 patients having operation achieved completely satisfactory results: 3 after resection and graft; 10 after aorto-aortic bypass graft, in addition to which one patient had nephrectomy and another had inferior mesenteric artery to renal artery shunt; 2 after a spleno-aortic bypass; 4 after aortoplasty, 1 after bilateral aortorenal bypass and subsequent nephrectomy and 1 after nephrectomy only. Seven (14%) of the fifty patients died shortly after the operation: 2 after insertion of an aorto-aortic bypass graft, 2 after nephrectomy only, 2 after splenoaortic bypass, and 1 after subclavian artery to homograft to aorta bypass graft.

## SUMMARY

1. Seventy-eight cases of congenital coarctation of the abdominal aorta have been reported.

2. The diagnosis of coarctation of the abdominal aorta can be suspected on the basis of physical examination and the precise location of the coarctation, outlined by retrograde aortography.

3. The most frequent location of an abdominal aortic coarctation is in the immediate vicinity of the origin of the renal artery.

4. Application of the bypass principle appears useful in the operative management of the patient with an abdominal aortic coarctation.

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# Thomas J. Kinsella, M.D.

J. ARTHUR MYERS, M.D.

Minneapolis

THOMAS KINSELLA was born on Oct. 9, 1895, of Irish parentage on a farm near Dexter, Minn., but in Grand Meadow township, Mower county. His father, William Dennis Kinsella, was then a farmer but later became a representative of a large threshing machine company, opening up various provinces of Canada, East Texas, and, later, Montana. His mother, Anna Marie Grimes (Graham), was one of the early graduates of the Nurses' Training School at the Rochester State Hospital. Tom began his formal education in a small country school house a mile and a half from the farm. Later the family moved to Dexter, Minn., where he finished first grade in the public school. They then moved to Spring Valley, Fillmore County, Minn., where he finished eighth grade in public school. In 1910 his father was transferred to Bozeman, Mont., where Tom completed high school at the Gallatin County High School, graduating in 1913. His premedical college work was carried out as a chemistry student at the Montana State College in Bozeman. During the school year he also worked in the biology department of the college and during vacation periods in the summer for the Montana State Board of Entomology in the Yellowstone Valley.

In the fall of 1915, Tom entered the School of Medicine of the University of Minnesota. He was assigned to my teaching section in gross anatomy. Throughout that year he did superior work not only in anatomy but also in all of the subjects of the freshman year. He was sincere, studious, ambitious, and thorough and did not work by the clock. He was elected to membership in the Nu Sigma Nu medical fraternity. He was just the kind of person with whom one would like to be associated through life.

He was highly respected by fellow students and faculty members alike. The photograph shows him with classmates in his freshman dissection section. None could have predicted that Tom would become a pioneer chest surgeon. He progressed steadily to the degree of Bachelor of Science in 1917. No time was wasted on vacations, and the summer of 1917 he spent in the pathology laboratories of Dr. William C. McCarty and Dr. Albert C. Broders at St. Mary's Hospital, Rochester, Minn. The summer of 1918 he worked in the experimental surgery laboratories at the Mayo Clinic under Dr. Frank Mann.

The medical students of this era (1917) were discharged from the national army and inducted into the Student Army Training Corps for the duration of the war. During the school year 1918-19, Dr. Kinsella carried out a surgical project in the experimental laboratories at the University of Minnesota producing a thesis under the title, "Experimental Transplantation of Glycerin Preserved Blood Vessels," which was awarded the Rollin E. Cutts gold medal in 1919. This same year, also, he was elected to Alpha Omega Alpha.

In 1919 he was awarded the degree of Bachelor of Medicine, and after an internship at the Minneapolis General Hospital he received the degree of Doctor of Medicine in 1920.

At the completion of the medical school year of 1919, Dr. Kinsella had been offered a surgical residency at the Mayo Clinic but declined at that time, preferring to take a rotating internship before going into surgery. When his internship was

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completed there was no opening for a resident in surgery at the Mayo Clinic because of the return of servicemen who had gone to war without completing their full residency. Therefore, he went to the Mayo Clinic on a medical fellowship with the understanding that when he had completed the diagnostic services he would be transferred to the surgical units. When this time arrived he began to meet resistance to such a transfer. He then received an offer from Dr. A. C. Strachauer, professor of surgery and head of that department at the university, to become his assistant in surgery at the Nicollet Clinic in Minneapolis. Dr. Kinsella accepted and also assisted Dr. James E. Johnson in his surgical work. Six months later he developed pulmonary tuberculosis, which ended his surgical career temporarily. A diagnosis of tuberculosis in those days caused severe disappointment, largely because of poor prognosis in so many cases; however, in Dr. Kinsella's case it proved a blessing in disguise. After the diagnosis, he promptly entered Cragmor Sanatorium in Colorado Springs as a patient under the care of Drs. Gerald B. Webb and Alexis M. Forester. When his health was sufficiently restored he was invited to join the sanatorium staff. In the fall of 1925, he declined an experimental surgery post at the University of Minnesota to become assistant medical director at Glen Lake Sanatorium. His work was management of one of the medical services but, in addition, he was placed in charge of the surgical work under the attending men: Dr. Arthur A. Law, chest surgery; Dr. Jennings C. Litzenberg, gynecology; and Dr. Gilbert J. Thomas, urology.

Dr. Law had done the first extrapleural thoracoplasty at Glen Lake Sanatorium in 1922. By 1925 he had done many of the various surgical procedures then in vogue. Dr. Kinsella worked with him for three years. When Dr. Law resigned in 1927, Dr. Kinsella's work had been of such high quality that, in 1928, he became head and director of all thoracic surgery in the 650-patient institution. Dr. Kinsella also continued to work with Dr. Gilbert Thomas in urology for eleven years, publishing a number of papers with him, and with Dr. Litzenberg in gynecology until 1936.

In 1936, after devoting full time to chest surgery at Glen Lake Sanatorium for eleven years, Dr. Kinsella opened an office for private practice in chest surgery in Minneapolis. However, he continued to do the surgery for the sanatorium. Later, he also performed the chest surgery for the Minnesota State Sanatorium, a portion of that for the Nopeming Sanatorium, Duluth, and, for various periods, the thoracic surgery for the North Dakota and the South Dakota state sanatoriums. In addition, he did the chest surgery for the Minneapolis General Hospital and, subsequently, for the United States Veterans Bureau Facility at Fort Snelling after 1943.

When he opened an office in Minneapolis he accepted invitations to and appointments on St. Mary's, Northwestern, and Abbott hospitals staffs. He remained on these staffs until retirement. In 1945 he became senior consultant in surgery at the Minneapolis General Hospital and at the United States Veterans facility at Fort Snelling.

In 1936 little thoracic surgery was done in this area aside from that for tuberculosis and empyema. Therefore, Dr. Kinsella became a pioneer in chest surgery for nontuberculous conditions. He performed the first successful lobectomies for bronchiectasis in the spring of 1937 and the first successful total pneumonectomy for bronchogenic carcinoma in Minnesota and surrounding territory on July 27, 1937. Numerous other pioneering successes included extra- and intrapleural pneumonolysis, Graham cautery-lobectomy for bronchiectasis, repair of perforations of the esophagus, excision of carcinoma of the esophagus, revisions of unsatisfactory thoracoplasty, excision of chest tumors and, later, patent ductus, and Blaylock procedures for cardiac disease and pulmonary resections for tuberculosis.

Since 1936 Dr. Kinsella has personally made complete colored photographic records of all the tumors he removed. He copied all pertinent roentgenograms on this group as well as many other interesting conditions using more than 7,500

Dr. Kinsella and class members of his section in anatomy, University of Minnesota, 1915. Front row: Manley H. Haynes, Stanley H. Haynes, Harold Richardson, Jay A. Myers, Oswald S. Wyatt, Arthur C. Johnson, Clarence M. Larson. Second row: Harold Rypins (?), Hugh T. Jones, Leslie McLachlin, William P. Rumpf, Roger Matson. Back row: Arthur Henderson, Thomas J. Kinsella, Alfred E. Lange, ???, Oscar F. Locken, Clarence B. Larson, Lloyd Rutledge, Frederick W. Behmler.

films. These are now filed together with the operative records and pathological material at St. Mary's Hospital.

Over the decades, Dr. Kinsella has been a much-sought teacher. In the University of Minnesota School of Medicine, he was appointed instructor in medicine in 1925. On transfer to the department of surgery, he served as assistant in surgery from 1932 to 1935. He was assistant clinical professor from 1935 to 1943, associate clinical professor from 1943 to 1949, and clinical professor from 1949 until 1964, when he became emeritus clinical professor of surgery. In all of these capacities he taught medical and nursing students, interns, residents, fellows, and other staff members. He also taught many surgeons from near and distant medical centers who came exclusively to learn his teachings and methods.

His name graces the membership list of his county, state, and national medical societies as well as the following special organizations: The American College of Surgeons, the American Thoracic Society, the American College of Chest Physicians, International College of Surgeons, Western Surgical Association, American Association for Thoracic Surgery, American Trudeau Society, Minneapolis Academy of Medicine, Minnesota Trudeau Society (later Thoracic Society), Minnesota Surgical Society, Minnesota Academy of Medicine, and Minneapolis Surgical Society. He is a founding member of the American Board of Thoracic Surgery.

He has been president of the following organization: Alumni Association Mayo Foundation, Hennepin County Medical Society, Minneapolis Surgical Society, Minnesota Trudeau Society, Minneapolis Academy of Medicine, Minnesota Academy of Medicine, and Minnesota Surgical Society.

He was recipient of the St. Barnabas Bowl Award in 1964. In conferring this honor, Mr. Samuel H. Rogers, chairman of the board of trustees, St. Barnabas Hospital, said: "When the final chapter of the control and perhaps eradication of tuberculosis is recorded, the pioneering courage and surgical skills which Thomas J. Kinsella has contributed to this noteworthy achievement will add substantially to the medical history and surgical renown which Minnesota and this territory already enjoy throughout the world."

Dr. Kinsella has published more than 100 articles in medical and scientific journals in addition to chapters in books and one book entitled *Tumors of the Chest.*

On Jan. 28, 1924, Dr. Kinsella and Miss Sara A. Monahan of Cedar Rapids, Iowa, were married. Through the decades Mrs. Kinsella has contributed greatly to his success. For many years they have taken a six-week summer vacation in the Rocky Mountains where they have enjoyed their hobbies of fishing and hunting; pack trips; rock hunting, cutting, and polishing; and mammalian fossil hunting. Other hobbies of Dr. Kinsella are reading Irish history, medical teaching, and photography.

In 1965 Dr. Kinsella published a paper under the title of "Retirement or Dismissal" in which he cited the case of Dr. G. F. Sauerbruch, who in his time was one of the outstanding surgeons of the world. However, he continued into his dotage with some fatal results. Concerning this Dr. Kinsella wrote, "What a pity that many a famous man is remembered by a younger generation not as the giant that he was in his prime or for the great things that he accomplished but rather as a distorted shadow of his former self or for some of the vagaries of his dotage."

Dr. Kinsella had observed somewhat similar cases among his acquaintances. Therefore, he decided to discontinue practice at the age of 70 years. When that birthday arrived, although he was as capable and alert as always, he abruptly discontinued all surgical procedures and closed his private office on July 1, 1965.

On the evening of June 5, 1965, the sisters of St. Mary's Hospital held a celebration in Dr. Kinsella's honor. A large number of his friends were in attendance and, following the dinner a number of his medical acquaintances presented their appraisal of him and his work.

On June 24, an exclusive banquet was held at the Knights of Columbus clubrooms for more than 140 men and women who had been Dr. Kinsella's patients. For this occasion he wanted "no master of ceremonies, no speeches—just a friendly get-together."

Soon after Dr. Kinsella's retirement, brief appraisals were requested of some of his associates. Sister Margaret Clare wrote, "To us who worked with him, however, the most amazing thing of all was the great fortitude and patience of the surgeon who could be in the operative field from seven in the morning until late at night and yet remain just as calm and unhurried at the finish as he had been at the start of the day. . . . Serving on committees with Dr. Kinsella was a real pleasure, for he was fearless in upholding right principles and was ever zealous in keeping medical standards at the highest level. St. Mary's Hospital has been singularly blessed by his unwavering loyalty and his professional skill and leadership over the years."

Catherine Gorman, his surgical nurse for twenty years, said, "It was with mixed feelings that I accepted his offer for I did not feel that I had the proper training to work for a man so competent and qualified in thoracic surgery. However, I soon found that he was a patient, kind, and soft-spoken person; a willing and excellent teacher; a surgeon who knew what he wanted, what he was going to do, and did it."

Mrs. Florence Olson, his secretary, wrote, "Since 1939 and for the past twelve years as his employee I have been learning to know Dr. Kinsella. . . . I am ever increasingly impressed with his integrity, honesty, his generosity in helping others, the ever-ready kindness with which he welcomes each intrusion into his crowded working days and through it all his deep humility. . . . It has given me immeasurable pleasure and reward to have worked for someone so highly regarded and dedicated to his profession, a man so very helpful to those in need—especially since I, too, am one of his grateful patients."

Dr. Victor K. Funk, who worked intimately with Dr. Kinsella for forty years, said: "On July 1st, 1926, I completed my internship and became the most junior member of the medical staff of Glen Lake Sanatorium. It was my good fortune to be assigned to the service of Dr. Kinsella and for nearly eighteen months he was my senior staff man and teacher. From him I learned the basic principles of the treatment of active tuberculosis by bed rest and collapse therapy. . . . When Dr. Kinsella took over the thoracic surgery program at the sanatorium in 1928, I became one of his assistants and in the course of the next thirty years assisted him in many hundreds of surgical procedures ranging from phrenic nerve surgery to pneumonectomies. He loved to teach and was always ready to explain and demonstrate his surgical technic whether it be to a student nurse, an interne, a resident, a staff colleague or a visiting surgeon. He was never too busy to give the benefit of his vast experience to a seeker of assistance. Finally, I find myself in the large company of persons with deep, personal reasons to be everlastingly grateful to Dr. Kinsella for services rendered to themselves or their families during the forty years of his medical practice in this community."

Dr. E. A. Regnier, a classmate in medical school and a close, life-long friend, wrote concerning Dr. Kinsella's surgery: "During surgery it was not uncommon, if the operation was going to be prolonged, for him to stop, put a hot pack over the wound, visit with the patient in conversation for five or six minutes, or sit down to rest and give the patient a chance to rest too. In other words, diligence was his greatest characteristic. He seemed to sense that the patient was under some stress. He also seemed to sense that a little bit of reassurance, while working under local anesthesia, was all the patient needed. He did most of his thoracotomies and thoracoplasties under local anesthesia, sometimes reinforced with a little bit of general anesthesia.

"Tom's intellectual honesty, his fundamental integrity, diligence, and complete devotion to the care of his patients made him beloved by all patients."

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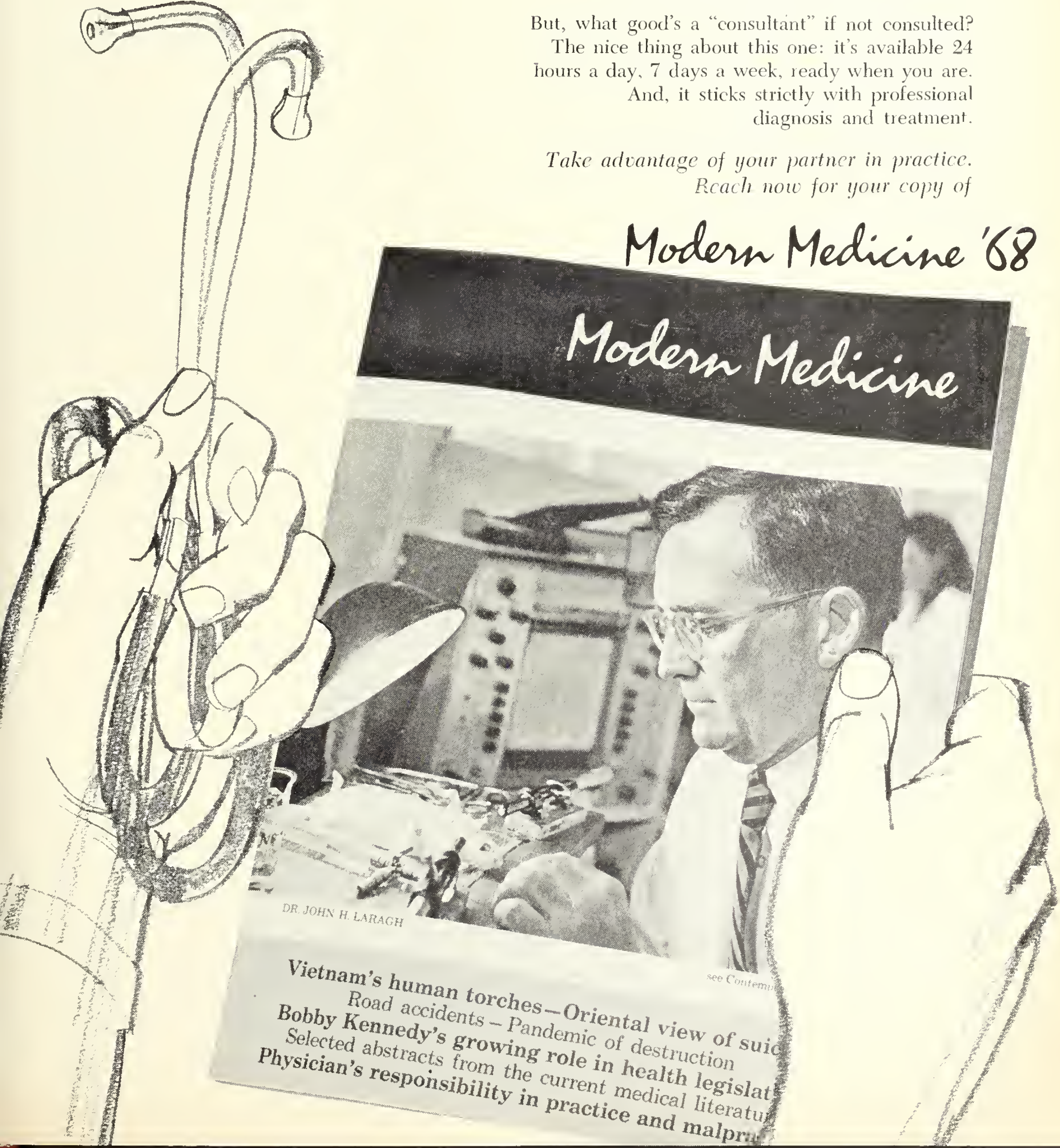
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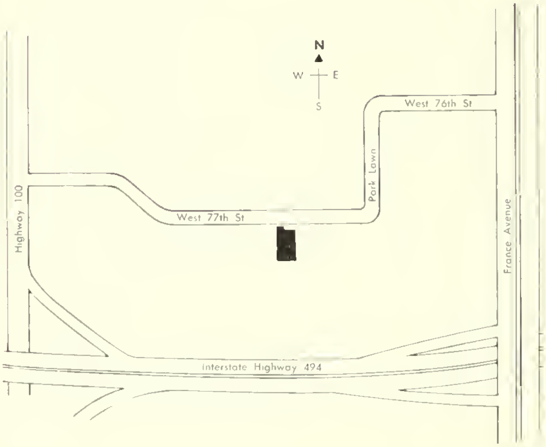

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# *Book Reviews . . .*

## Bladder Cancer: A Symposium

*edited by* KENNETH F. LAMPE, PH.D., *296 pp., ill., Aesculapius Publishing Co., Birgmingham, Ala., 1967. $15*

The title of this book is somewhat misleading, since it is concerned primarily with what is known and what is suspected about the etiology of vesical neoplasms, particularly in relation to exposure to known carcinogens. There are 17 chapters by different authors on this subject. The agents which are discussed are mainly 1 and 2 naphthylamine, benzidene, their breakdown products, and cigarette smoking. The occupational aspects resulting from exposure to chemicals and manufacturing processes are well covered, and there is considerable speculation about the mechanism of carcinogenesis.

In addition, there are brief discussions of the clinical and pathological aspects of bladder tumors, together with endoscopic and open treatment by operation, by irradiation, and by chemotherapy.

However, it will interest chiefly those concerned with the etiology and pathogenesis of vesical neoplasms. Because of the multiplicity of authors, there is a good deal of duplication—as is the case with most such symposia.

C. D. CREEVY, M.D.
*Minneapolis*

## An Introduction to Functional Anatomy

*by* DAVID SINCLAIR, M.D., *466 pp., ill., F. A. Davis Co., Philadelphia, Pa. $10.50*

The third edition of this text by Dr. David Sinclair has been amended to a considerable extent. It has, in addition, been lengthened especially by the use of new material on bones and on the lower limb. The chapters on joints and the genitourinary system have been completely rewritten.

The book is well supplied by illustrations and appears to be oriented especially to those interested in physical and occupational therapy. To those interested primarily in the study and review of this type of therapy this book is highly recommended.

R. F. ERICKSON, M.D.
*Minneapolis*

## NEW BOOKS RECEIVED

**Mechanical Artificial Ventilation: A Manual for Students and Practitioners**
by TERRING W. HEIRONIMUS, III, M.D., 102 pp., ill. Charles C Thomas Co., Springfield, Ill., 1967. $5.75

**Cancer in Pregnancy**
by LARRY McGOWAN, M.D., 142 pp., Charles C Thomas Co., Springfield, Ill., 1967. $7.50

**The Growth of Medicine**
edited by FREDERICK STENN, M.D., 199 pp., Charles C Thomas Co., Springfield, Ill., 1967. $9.50

**Speaking and Writing in Medicine: The Art of Communication**
by CLIFFORD F. HAWKINS, M.D., 159 pp., ill., Charles C Thomas Co., Springfield, Ill., 1967. $8.50

**Treatment of Chromophobe Adenoma**
by HENDRIK J. SVIEN, M.D., and MALCOLM Y. COLBY, JR., M.D., 107 pp., ill., Charles C Thomas Co., Springfield, Ill., 1967. $7.50

**The Pediatric Patient/1967**
by SARAH R. GUSTAFSON, Ph.D., and DAVID BAIRD COURSIN, M.D., 272 pp., ill., 1967. $7

# *News Briefs . . .*

## Minnesota

THE SOUTHERN MINNESOTA ACADEMY OF GENERAL PRACTICE seminar was held recently in St. Peter. Those attending were Drs. Richard Searl, P. F. Meyer, Asa Graham, and Paul Bauer, Faribault; Roy Good, Northfield; and Jo Anderson and A. D. Walden, Le Sueur.

* * * *

REELECTED TO ACTIVE MEMBERSHIP in the American Academy of General Practice are: Drs. Edward W. Ciriacy, Ely; Franklin C. Anderson, Owatonna; Herbert L. Huffington, Elysian; and Ralph H. Buesgens, Waterville.

* * * *

DR. CURTIS A. JOHNSON of Waseca was elected to active membership in the American Academy of General Practice.

* * * *

DR. HERMAN J. JUST, Dakota county coroner, has appointed Drs. John O. H. Peterson, Hastings, and Murray H. Hunter, Farmington, as deputy coroners.

* * * *

DR. MARTIN R. SWERSKY, Cass Lake, has been appointed medical officer of the U.S. Public Health Service Indian Hospital.

* * * *

DR. HUGH BUTT, chairman of sections of gastroenterology at the Mayo Clinic, has been reappointed as a member of the Council on Foods and Nutrition of the American Medical Association.

* * * *

DR. ROBERT H. RANSOM, Osseo, was presented with the community service award given annually by North Memorial Hospital, Minneapolis.

* * * *

DR. ROGER A. JOHNSON will become medical director of Faribault State Hospital, succeeding Dr. Edward J. Engberg.

* * * *

DRS. MILTON M. HURWITZ, St. Paul, and ROBERT A. GOOD, Minneapolis, were among 15 leaders in medicine, law, religion, education, and communications chosen by the American Heart Association to study the ethical, moral, and legal implications of heart transplants.

* * * *

DR. JACK L. STROBEL has joined the department of pediatrics at the St. Louis Park Medical Center, Minneapolis.

* * * *

DR. JOHN SANFORD, Duluth, has succeeded Dr. F. W. Conley as chief of staff of Miller Memorial Hospital. Other officers are Drs. William Slack, vice-chief of staff, and Robert Goldish, secretary-treasurer.

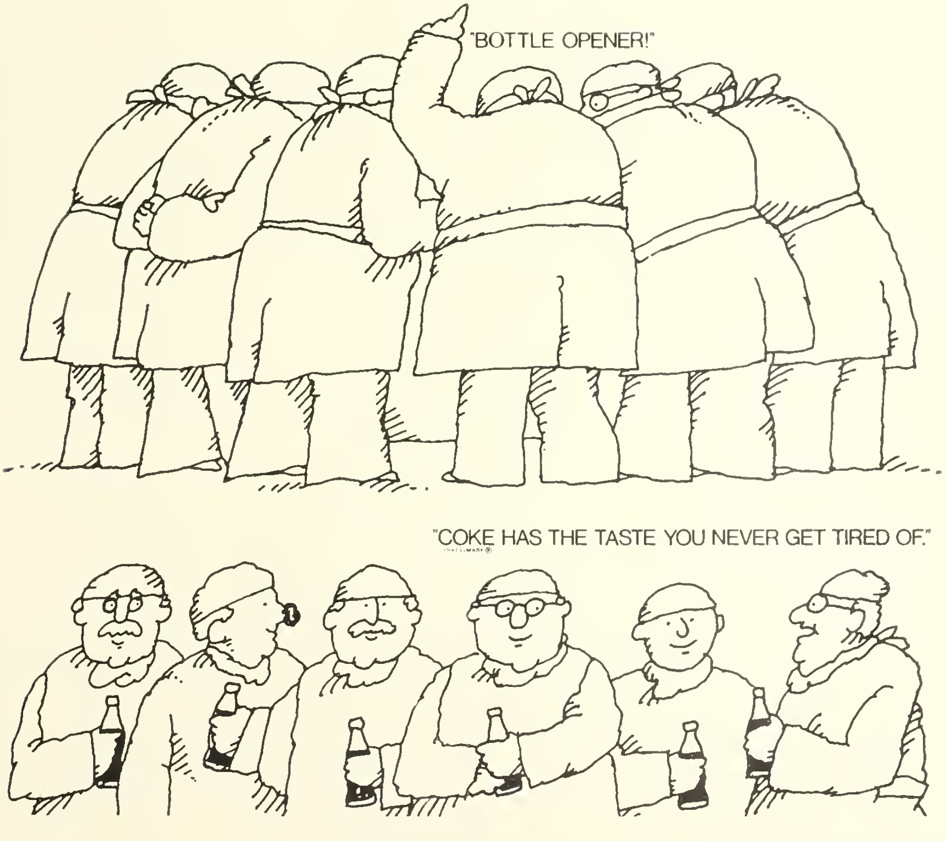
* * * *

THE ANOKA MEDICAL FOUNDATION, a group of 50 local physicians, was recently formed so that varied community needs could be better served.

* * * *

DR. CONRAD WILKOWSKE of the St. Louis Park Medical Center has been selected to serve the city as its health officer.

(Continued on page 8A)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## NEWS BRIEFS

(Continued from page 7A)

DR. J. P. GRAHEK, Ely, attended the annual Mediclinics postgraduate medical refresher course, sponsored by the Minnesota and Florida chapters of the American Academy of General Practice, in Fort Lauderdale, Fla.

* * * *

DR. BEN M. TUMA, a general practitioner, has joined the staff of the Faribault Clinic.

* * * *

DR. PAUL W. GERSTER, Anoka, has been installed as a Fellow of the American College of Obstetricians and Gynecologists.

* * * *

EMOTIONS AND CORONARY DISEASE, a one-day symposium held at North Memorial Hospital, Minneapolis, was attended by 400 physicians.

* * * *

DR. CHARLES CODE, Rochester, director for medical education and research of the Mayo Foundation, spoke on "Gastroduodenal motor and electrical activity" at the Institute of Gastroenterology of the Presbyterian University, Pennsylvania Medical Center, in Philadelphia.

* * * *

A MEMORIAL FUND for Dr. Morse J. Shapiro, former Minneapolis physician who died recently in Los Angeles, has been established by the Minnesota Medical Foundation to be used for research in pediatric cardiology at the Variety Club Heart Hospital, Minneapolis.

* * * *

DR. F. D. BANFIELD, Rochester, a member of the Olmsted Medical Group, has been named president of the southeast chapter of the Minnesota Academy of General Practice, succeeding Dr. Clayton Bennett. Other officers are Drs. Bradford Friedrich, Red Wing, vice-president, and W. E. Walter, Wanamingo, secretary-treasurer.

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* * * *

DR. GERSHON THOMPSON, Rochester, retired head of the section of urology at the Mayo Clinic and former president of the clinic's staff, received a distinguished alumni citation from Washington University, St. Louis, Mo. Dr. Thompson, who is credited with the invention of a transurethral surgical technique, has also served as president of the United States chapter of the International College of Surgeons and as personal physician to Lyndon Johnson during his term as vice-president.

* * * *

DR. KRISTOFER HAGEN, Minneapolis, has returned from two months' service in South Vietnam as part of the American Medical Association's Volunteer Physicians for Vietnam program.

* * * *

DR. JAMES C. CAIN of the Mayo Clinic, Rochester, has been named to the national Health Advisory Committee, which works with the Office of Emergency Planning.

* * * *

DR. J. E. ANDERSON of Le Sueur was appointed county public health officer and a member of the county nursing advisory board.

* * * *

DR. DAVID J. VAIL, medical director of the Minnesota Welfare Department, has been appointed by Gov. LeVander to serve on the National Committee on Uniform Traffic Laws.

* * * *

DR. L. G. REICHELT of Wadena was elected chief of staff of Wesley Hospital. Dr. J. L. Kevern is vice-president and Dr. W. E. Halme is secretary.

* * * *

DR. DONN G. MOSSER of Minneapolis is general chairman of the state cancer crusade, sponsored by the American Cancer Society.

* * * *

DR. KENNETH E. AHOLA of Hibbing has been elected president of the Range Medical Society. Other officers are Drs. Vernon D. Erickson, Grand Rapids, president-elect; Robert E. Hansen, Hibbing, vice-president; and E. Larry Kruger, Nashwauk, secretary-treasurer.

* * * *

DR. MICHAEL D. LEVITT of St. Paul has been appointed assistant professor of medicine in the gastrointestinal unit of the department of medicine, University of Minnesota.

* * * *

DR. ROBERT D. MATHISON, formerly of Kimbal, has opened a general medical practice in Plainview.

* * * *

DR. F. C. JACOBSON has been elected chief of staff of Duluth's St. Luke's Hospital. New board members are Drs. J. J. Coll, head of internal medicine; L. R. Gowan, Jr., head of neuropsychiatry; Paul Van Puffelen, head of obstetrics; and H. J. Jeronimus, chief of general practice.

* * * *

DR. ROBERT T. HILKER has been elected president and chief of staff of the Owatonna City Hospital. Other officers are Drs. Kenneth Henry and Roger Benjamin, vice-president and secretary, respectively.

* * * *

DR. O. E. WIGER of Little Falls has been elected president of the medical staff of St. Gabriel's Hospital. Dr. H. A. Scanlon is vice-president and Dr. R. A. Belcher is secretary.

A $46,914 GRANT has been received by the University of Minnesota from the John A. Hartford Foundation, Inc., New York, for medical research on blood flow in the tissues of the leg. Dr. John P. Delaney, assistant professor of surgery, will head the study.

* * * *

DR. S. T. KUCERA of Northfield has temporarily volunteered his services at the Maryknoll Mission Hospital, San Pedro Necta, Guatemala.

* * * *

THE MINNESOTA TWINS have appointed two doctors to serve as their team physicians. They are Dr. Leonard J. Michienzi, St. Paul, general and preventive medical needs, and Dr. Harvey O'Phelan, Minneapolis, orthopedic surgeon. They succeed the late Dr. William E. Proffitt, Jr.

## South Dakota

DR. ALFRED SHOUSA announced the relocation of his office in southwest Britton.

* * * *

DR. WALTER E. MARCHAND, Sturgis, recently received a twenty-five-year service pin in appreciation of his work at Fort Meade Veterans Administration Hospital.

* * * *

DR. A. J. JANUSZ was elected chief of staff at St. Luke's Hospital, Aberdeen. Other doctors on the executive committee are: E. A. Rudolph, immediate past-president; D. J. Destache, vice-president; G. H. Steele, secretary-treasurer; B. F. King, head of general practice; Jaun Chavier, head of obstetrics and pediatrics; William R. Taylor, head of medicine; and B. C. Gerber, head of surgery.

* * * *

DR. RALPH ERDMANN, formerly of Texas, has been appointed full-time medical director of laboratories at St. Joseph Hospital in Mitchell.

* * * *

DR. CHRIS MOLLER of Dell Rapids told of his medical experiences with Vietnamese civilians at a meeting of the Tri-Valley PTA. Dr. Moller, who went to Vietnam in September, was sponsored by the American Medical Association USAID program.

* * * *

DR. ROBERT BORMES of Aberdeen was reelected president of the board of directors of Dakota Midland Hospital.

* * * *

DR. WAYNE J. JACKSON, formerly of Sutton, Neb., has opened a practice in Winner, in association with Dr. Robert Stiehl.

* * * *

DR. DUANE G. MONSON has been appointed radiologist at both Watertown hospitals.

* * * *

DR. J. D. BAILEY of Rapid City was reelected president of the West River Mental Health Center.

* * * *

DR. W. B. ODLAND was elected president of the St. John's Hospital, Huron, medical staff, succeeding Dr. Paul Tschetter. Other officers are Drs. E. A. Hofer, vice-president, and W. W. Hanson, secretary.

* * * *

DR. ANDRIES DE BOER, formerly of Lennox, was named chief of the industrial health branch of the Panama Canal Preventive Medicine Division.

# *Classified Advertisements*

**WANTED:** GP to join clinic serving population area of 12,000. City has new hospital, new clinic building, two nursing homes, new Jr-Sr high school, new swimming pool, rich farming area in Red River Valley. Fishing and hunting nearby; metropolitan city close by. Salary open and partnership if interested. Write or call Warren Clinic, Warren, Minn. 56762. 742-6231, area code 218.

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*Indications:* Tofrānil is recommended for the treatment of depressive states of diverse psychopathology.

*Contraindications:* The concomitant use of Tofrānil and monoamine oxidase inhibiting (M.A.O.I.) compounds is contraindicated. Hyperpyretic crises or severe convulsive seizures may occur. Potentiation of adverse effects can be serious or even fatal. An interval of at least 7 days after M.A.O.I. therapy has been discontinued should be allowed before Tofrānil may be substituted. Initial Tofrānil dosage should be low, increases should be gradual, and the patient's progress should be carefully observed.

*Warning:* Clinical reports have suggested that there may be a risk of teratogenesis associated with the use of this compound during the first trimester of pregnancy. Unless, in the opinion of the prescribing physician, the potential benefits outweigh the possible risks, Tofrānil should not be used during the first trimester of pregnancy.

Cardiovascular complications, including myocardial infarction and arrhythmias, have occasionally occurred in susceptible individuals. Patients with cardiovascular disease should be given the drug only under careful observation and in low dosage.

*Precautions:* Since suicide is always a possibility in severely depressed patients and one which may persist until significant remission occurs, such patients should be carefully supervised during early treatment with Tofrānil. Some severely depressed patients may also require hospitalization and/or concomitant electroconvulsive therapy.

Because of its anticholinergic effect, caution should be observed in prescribing Tofrānil for patients with increased intraocular pressure.

In rare instances, transient cardia
arrhythmias have occurred in hype
thyroid patients and in patients receiving thyroid medication when Tofrānil was added to the regimen
Imipramine may block the pharma
cologic activity of guanethidine ar
other related adrenergic neuron-blocking agents.

The drug is not recommended at t
present time in patients under 12
of age.

*Adverse Reactions:* Dryness of the
mouth, tachycardia, constipation,
turbances of accommodation, swe
ing, dizziness, weight gain, urinar
frequency or retention, nausea an
vomiting, peripheral neuritis, mild
parkinson-like syndrome, tremors
rare cases of falling in elderly patients, confusional states (with su
symptoms as hallucinations and d
orientation), activation of psychos
schizophrenics and agitation (incl

# When a milestone in life is marred by depression...

Often in the mind of the lonely, widowed, depression-prone individual, she's not gaining a daughter...she's losing a son. The occasion may be marred by depression with such symptoms as feelings of sadness, incapacity, helplessness and hopelessness.

Tofrānil often relieves symptoms of depression.

As maintenance therapy during the active phase of depression, it may help prevent relapse.

The use of Tofrānil in patients receiving M.A.O.I.'s is contraindicated.

In patients with cardiovascular disease, hyperthyroidism or increased intraocular pressure; or in those receiving anticholinergics (including antiparkinsonism agents), thyroid medication, or antihypertensive adrenergic neuron-blocking agents; and in those in their first trimester of pregnancy, the special precautions listed in the prescribing information should be carefully observed.

Toxic reactions severe enough to require discontinuation of Tofrānil are uncommon. However, for complete details, please refer to the full prescribing information.

**Tofrānil® imipramine hydrochloride**
**Geigy**

ypomanic and manic episodes)
n may require dosage reduction
or addition of a tranquilizer or
orary discontinuation of the drug,
ptiform seizures, orthostatic
tension and substantial blood
ure fall in hypertensive patients,
ura, transient jaundice, bone mar-
epression including agranulocy-
sensitization and skin rash
ding photosensitization, eosino-
, and mild withdrawal symptoms
dden discontinuation after pro-
d treatment with high doses.
sional hormonal effects (im-
ce, decreased libido, and estro-
effects) may be observed.
ine-like effects may be more
unced (e.g. paralytic ileus) in
ptible patients and in those
anticholinergic agents (includ-
ntiparkinsonism drugs).
*tient Adult Dosage:* Initially,
. daily, increased, if necessary, to 150 or 200 mg. Maintenance dosage may be lower, 50 to 150 mg. daily, if possible.

*Geriatric and Adolescent Dosage:* Initially, 30 or 40 mg. daily, which may be increased according to response and tolerance. It is usually unnecessary to exceed 100 mg. daily.

A lag in therapeutic response, lasting from a few days to a few weeks, should be expected. When dosage recommendations are already being followed, increasing the dosage does not normally shorten this latency period and may increase the incidence of adverse reactions.

*Availability:* Tofrānil: Round tablets of 25 and 50 mg.; triangular tablets of 10 mg. for geriatric and adolescent use; and ampuls, each containing 25 mg. in 2 cc. for I.M. administration.
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**For complete details, please refer to the full Prescribing Information.**

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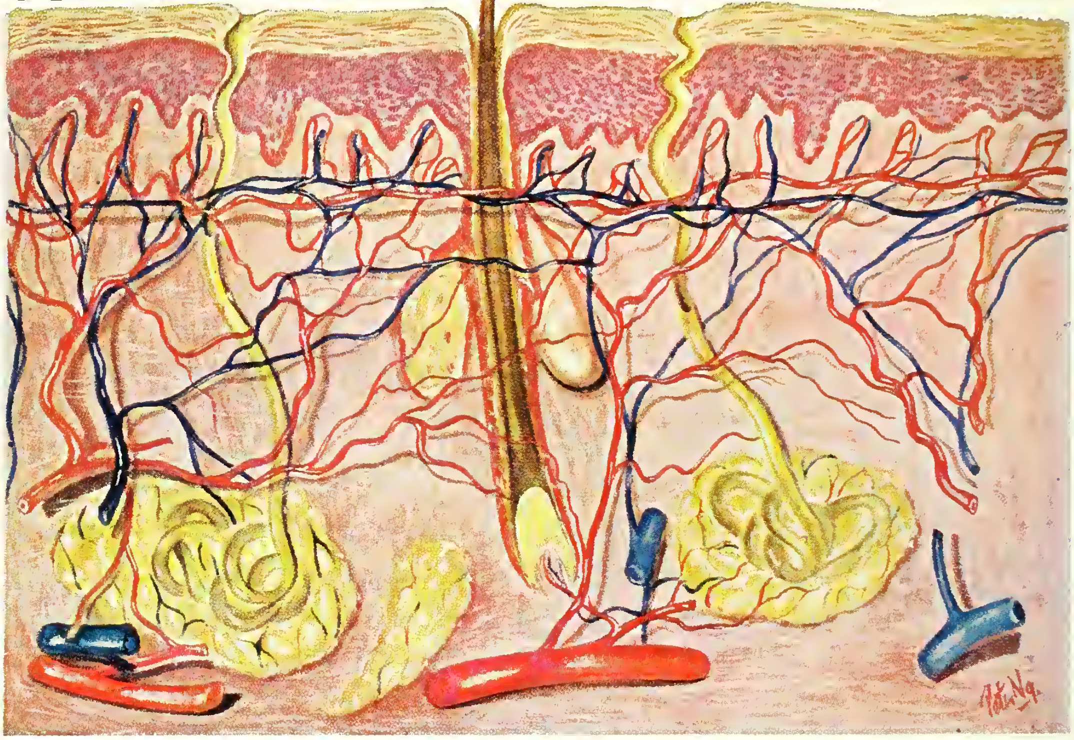

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**Caution:** As with other antibiotic preparations, prolonged use may result in overgrowth of nonsusceptible organisms and/or fungi. Appropriate measures should be taken if this occurs. Articles in the current medical literature indicate an increase in the prevalence of persons allergic to neomycin. The possibility of such a reaction should be borne in mind.

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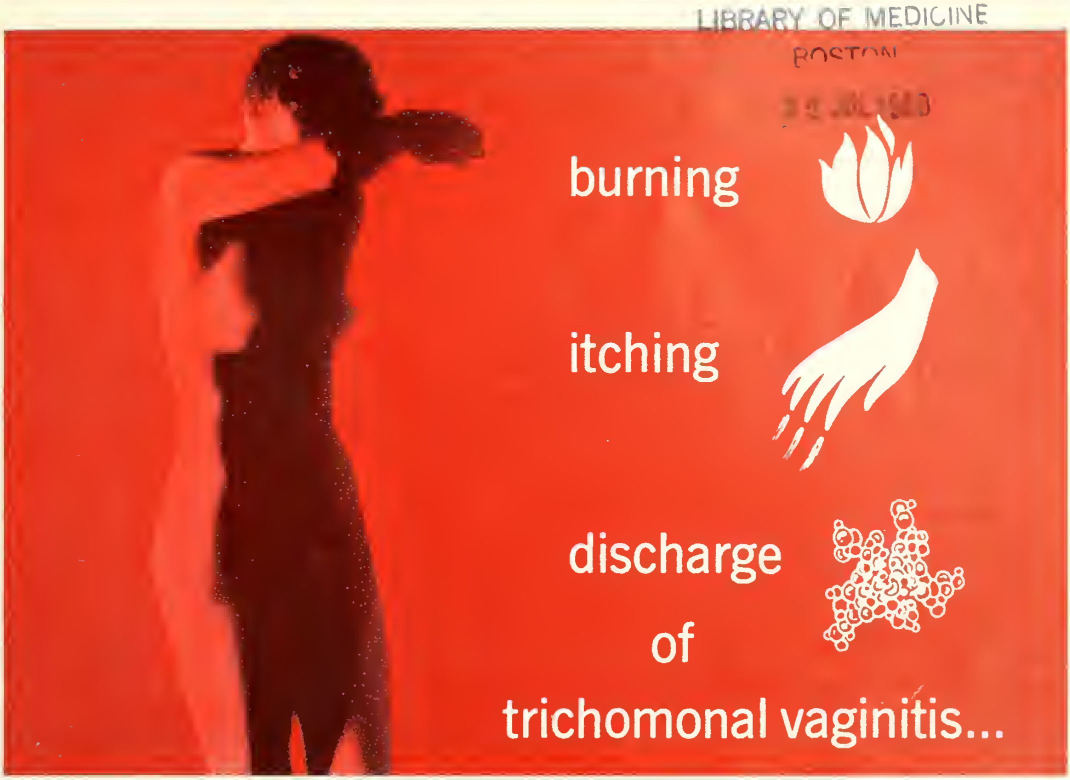

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For the most widespread form of vaginitis the most widely successful therapeutic agent, Flagyl, is clearly indicated.

In trichomonal vaginitis, most physicians have reported a cure-rate of 95 per cent or more with Flagyl when infected male partners are treated concurrently and when treatment is repeated for occasional refractory infections in women.

This high rate of cure obtained with Flagyl is unparalleled. Only systemically active Flagyl reaches the hidden reservoirs of reinfection in male and female genitourinary tracts.

*Indications:* Flagyl is indicated only in the treatment of trichomoniasis in both the male and female.

*Contraindications:* Pregnancy; disease of the central nervous system; evidence or history of blood dyscrasia.

*Precaution:* Complete blood cell counts should be made before, during and after therapy, especially if a second course is necessary.

*Side effects:* Infrequent and minor side effects include nausea, metallic taste and furry tongue. Gastrointestinal disturbances, flushing and headache sometimes occur, especially with concomitant ingestion of alcohol. The taste of alcoholic beverages may be altered. Other effects, all reported in an incidence of less than 1 per cent, are diarrhea, dizziness, vaginal dryness and burning, dry mouth, rash, urticaria, gastritis, drowsiness, insomnia, pruritus, sore tongue, darkened urine, anorexia, vomiting, epigastric distress, dysuria, depression, vertigo, incoordination, ataxia, abdominal cramping, constipation, stomatitis, numbness or paresthesia of an extremity, joint pains, confusion, irritability, weakness, cystitis, pelvic pressure, dyspareunia, fever, polyuria, incontinence, decreased libido, nasal congestion, proctitis and pyuria. Elimination of trichomonads may aggravate candidiasis.

*Dosage and Administration:* In women: one 250-mg. oral tablet three times daily for ten days. A vaginal insert of 500 mg. is available for local therapy when desired. When used, one vaginal insert should be placed high in the vaginal vault each day for ten days; concurrently two oral tablets should be taken daily.

In men: When trichomonads are demonstrated, one 250-mg. oral tablet twice daily for ten days in conjunction with treatment of his female partner.

*Dosage Forms:* Oral tablets–250 mg.
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**SEARLE** *Research in the Service of Medicine*

New

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carbamazepine

# Therapeutic breakthrough in non-narcotic control of the pain of trigeminal neuralgia

**Warning**
**Fatal cases of aplastic anemia have been reported following treatment with Tegretol. Agranulocytosis, thrombocytopenia and transitory leukopenia have also been observed. Complete blood and platelet counts should be done prior to and at regular intervals during treatment with the drug (see recommendations under "Important Note and Precautions") to help in the early detection of serious bone marrow injury. Abnormalities in initial blood tests should rule out use of the drug. Also, patients should be made aware of such early toxic signs of a potential hematologic problem as fever, sore throat, mouth ulcers, easy bruising and petechial or purpuric hemorrhage. Should such signs appear, the patient should be advised to discontinue the drug and to report to the physician immediately.**

**Indication** Tegretol is indicated in the treatment of the pain associated with true trigeminal neuralgia. It is not a simple analgesic and should never be administered for relief of trivial facial aches or pains.

**Contraindication** Do not use in those with a known sensitivity to any tricyclic compound or in those being treated with M.A.O.I. agents. As long a period as possible should elapse before using Tegretol in patients who have been treated with M.A.O.I.'s, with a minimum of 7 days. In such cases, initial dosage should be low and the patient's reaction to gradual increments closely observed.

**Important Note and Precautions** Familiarity with the clinical symptoms which lead to an accurate diagnosis of true trigeminal neuralgia and with the complete prescribing information, careful patient selection, a thorough examination before treatment and close patient supervision throughout the treatment period are essential to the safe and effective use of this drug.

Where feasible, Tegretol should not be used in conjunction with any potent drug which may increase the possibility of toxic reactions.

*In pregnancy,* the drug should not be prescribed during the first trimester and thereafter only to patients in whom the clinical situation warrants the potential risk. It should not be administered to nursing mothers.

Patients with increased intraocular pressure should be closely observed during treatment with this drug because of its anticholinergic effect. Because of the drug's relationship to other tricyclic compounds, the possibility of activation of latent psychosis and, in the elderly, of confusion or agitation, should be considered.

Dizziness and drowsiness may occur and patients should be cautioned about the hazards of operating machinery or automobiles and of engaging in other hazardous tasks.

**Use cautiously in patients with a history of coronary artery disease, organic heart disease, congestive failure or liver disease.**

**Before initiating therapy, the following laboratory procedures should be performed:**

1. Complete blood and platelet counts which, if abnormal, should rule out the use of the drug.
2. Baseline evaluations of liver function.

**During treatment with Tegretol, the following laboratory procedures should be performed:**

1. Complete blood and platelet counts should be done at intervals of one week during the first month of drug treatment, every two weeks during the second and third months, and at monthly intervals thereafter for as long as the patient is taking the drug. A trend toward a decreasing white blood cell count should suggest a dosage reduction and more frequent laboratory and clinical evaluations. Should this trend continue, the drug should be discontinued.
2. Liver function tests must be performed at regular intervals during treatment with this drug since liver damage may occur during therapy. The drug should be discontinued immediately in cases of aggravated liver dysfunction or active liver disease.
3. Periodic eye examinations, including slit-lamp, funduscopy and tonometry, are recommended for patients being treated with this drug since many phenothiazines and related drugs have been shown to cause eye changes.
4. Complete urinalysis and BUN should be done on patients treated with Tegretol because of observed renal dysfunction.

**Adverse Reactions** Dizziness, drowsiness, unsteadiness on the feet, nausea, vomiting, aplastic anemia, transitory leukopenia, agranulocytosis, eosinophilia, leukocytosis, thrombocytopenia, purpura, abnormalities in liver function tests, cholestatic and hepatocellular jaundice, urinary frequency, acute urinary retention, oliguria with elevated blood pressure, albuminuria, glycosuria, elevated BUN, microscopic deposits in the urine, impotence, disturbances of coordination, confusion, headache, fatigue, blurred vision, transient diplopia and oculomotor disturbances, speech disturbances, abnormal involuntary movements, peripheral neuritis and paresthesias, depression with agitation, talkativeness, nystagmus, tinnitus, paralysis and other symptoms of cerebral arterial insufficiency, pruritic and erythematous rashes, urticaria, Stevens-Johnson syndrome, photosensitivity reactions, alterations in skin pigmentation, exfoliative dermatitis, alopecia, diaphoresis, recurrence of thrombophlebitis, erythema multiforme and nodosum, aggravation of disseminated lupus erythematosus, gastric distress, abdominal pain, diarrhea, constipation, anorexia, dryness of the mouth and pharynx, glossitis, stomatitis, fever, chills, adenopathy, lymphadenopathy, aching joints and muscles, leg cramps, conjunctivitis, left ventricular failure, aggravation of hypertension, hypotension, syncope and collapse, edema, aggravation of coronary artery disease and congestive heart failure. (Whether these cardiovascular effects are drug-related is not known. However, some of these complications have resulted in fatalities.) The necessity for discontinuing the drug should be dictated by the gravity and severity of the adverse reactions.

**Dosage and Administration** The drug should always be taken with meals, if possible.

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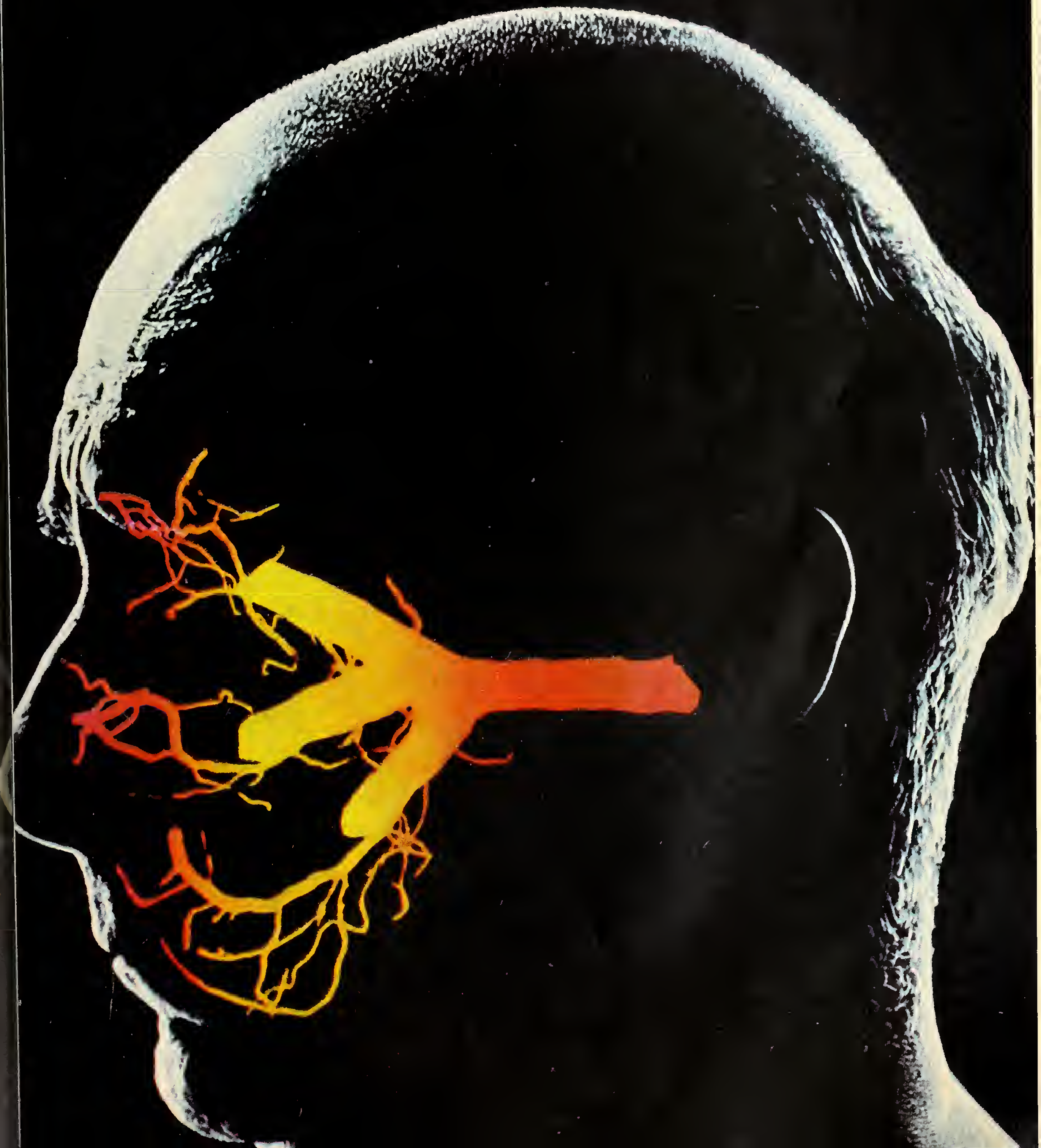

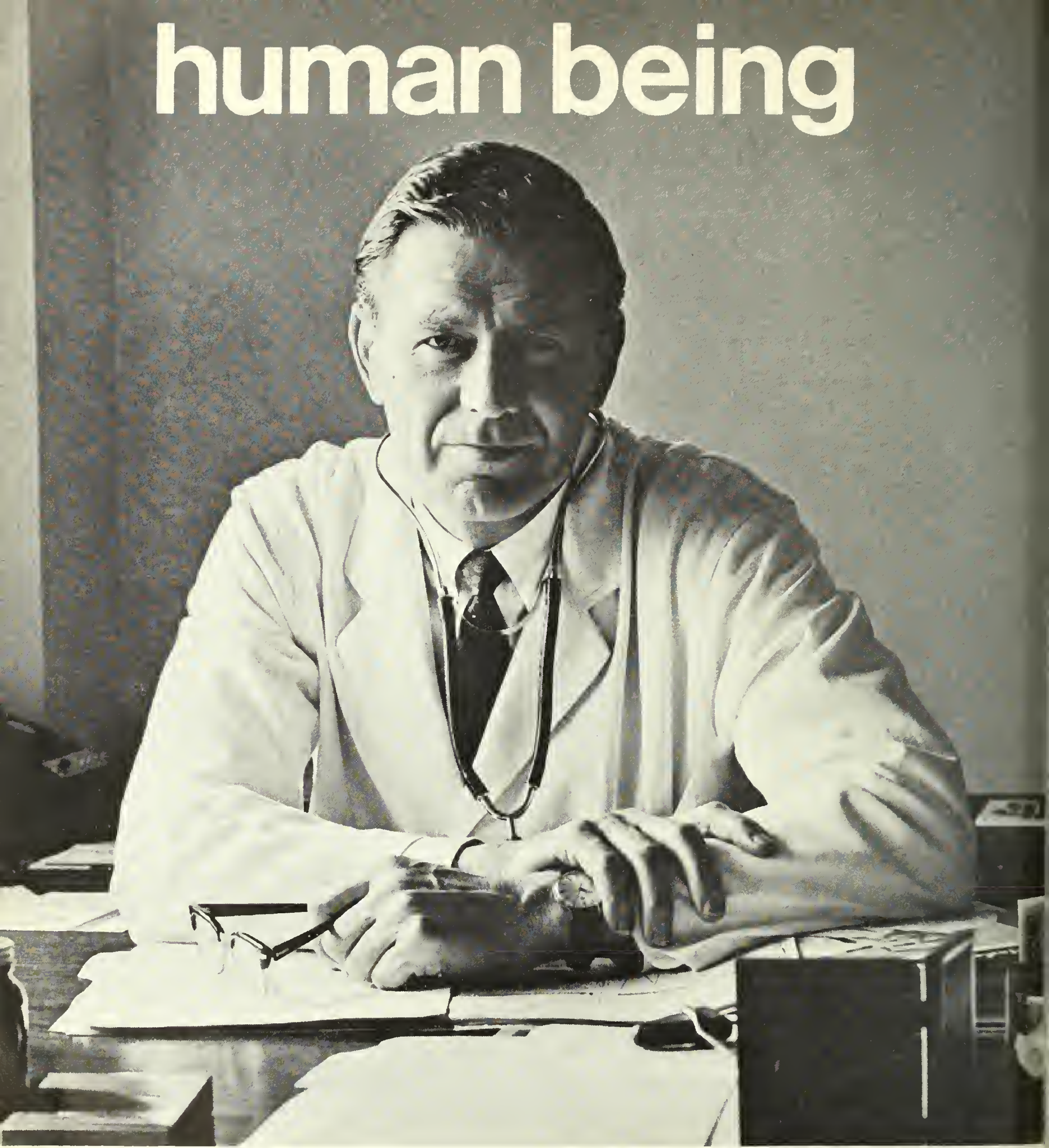

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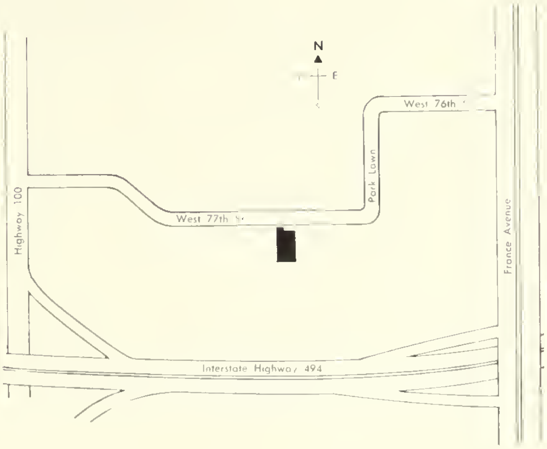

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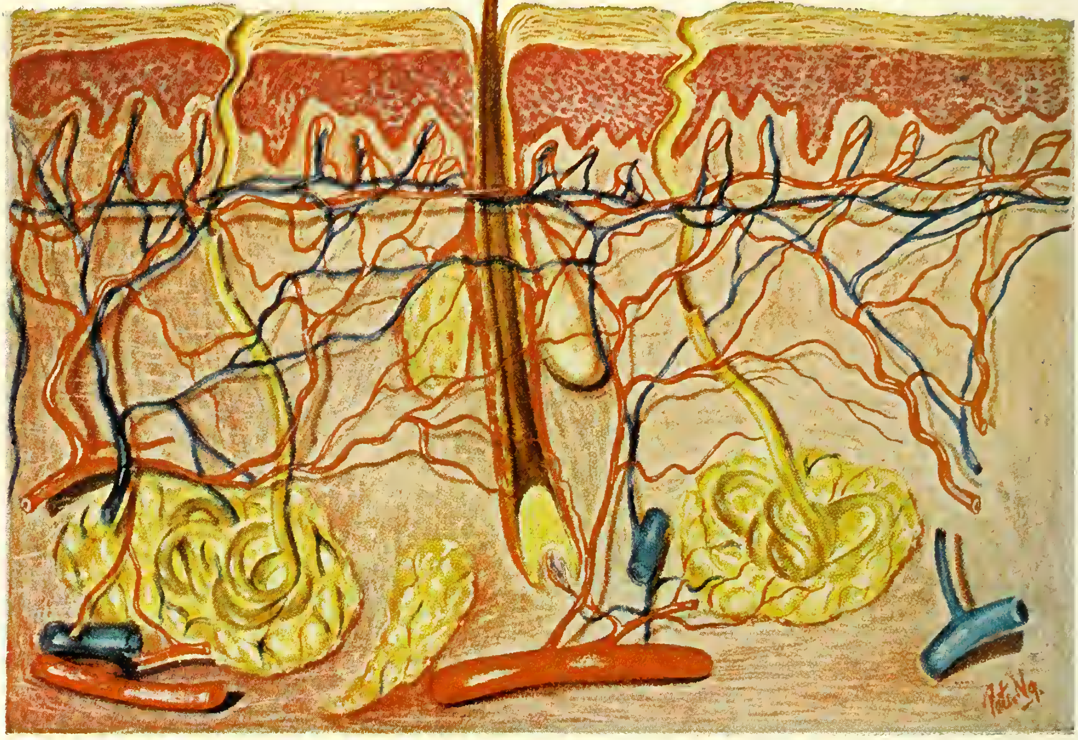

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# Symposium on Tissue Transplantation

## FOREWORD

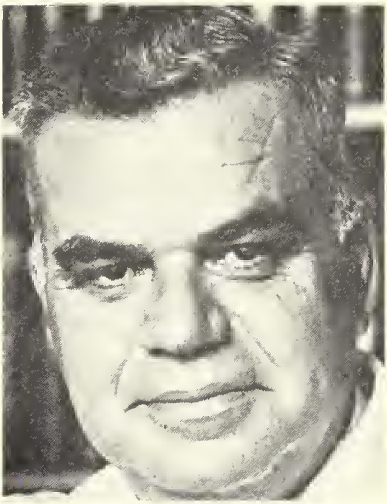
Perusal of the papers in this symposium on tissue transplantation will bring out the fact that many problems remain and that figuratively we just have our foot in the door. Nevertheless, the startling contrast in what it is now possible to achieve in human renal transplantation is apparent when one thinks back only a few years ago when it was a rarity for prolonged survival and function to occur. Now there are individuals who have survived as long as seven years on an allotransplanted kidney and there are many such individuals approaching the four-year mark.

Among the problems remaining are those related to collection and preservation of cadaver organs for transplantation, a better means of immunosuppression, an accurate method of identifying allograft rejection, and a simple reliable means of identifying the histocompatibility diffences between a prospective recipient and donor. These areas are all under intensive study throughout the world, and it seems that it will be only a matter of time before substantial improvements are made in dealing with these problems. Perhaps the most important area of all which awaits understanding is the fundamental mechanism of the immune response which is the keystone of the problem of allotransplantation. It is here that our greatest opportunity exists to arrive at rational solutions of the major need for immunosuppression in transplantation. It will probably be only then that widespread success will be achieved in the transplantation of other major organs such as the heart, lung, and liver since we must rely on a continuing high degree of function of these tissues throughout the posttransplantation period if the patient is to survive not having available artificial substitutes which can take over the function of the organ for days or weeks as in the case of the kidney.

Again, with a detailed understanding of immunologic rejection and with therapeutic tools based on this knowledge, we should be able to overcome and forestall those insidious histologic changes recognized currently in well-functioning renal allografts.

Finally, it must be recognized that the possibility of tissue transplantation has brought with it social, economic, and moral problems all of which need attention if satisfactory solutions are to be readied. It is my expectation that these solutions can be reached as they have been in the case of open-heart surgery with the betterment of techniques and knowledge.

WILLIAM D. KELLY, M.D.



*Dr. Carlos Martinez*

## Dedication

This issue of the JOURNAL-LANCET on transplantation is dedicated humbly and gratefully to the memory of Dr. Carlos Martinez, American Cancer Society professor, department of physiology, University of Minnesota Medical School, who died unexpectedly Aug. 24, 1966.

Dr. Martinez, a native of Argentina, received his schooling in that country and did extensive work on the subject of diabetes in collaboration with Dr. Bernardo Houssay. Dr. Martinez came to the United States for several years in 1943 as a Rockefeller Foundation Fellow in the Department of Physiology at the University of Minnesota. He subsequently returned in 1951 to the same department to fill the W. A. O'Brien professorship in the division of cancer biology where he conducted many studies of the mouse mammary carcinoma with Dr. John Bittner, including experiments with transplantation of these tumors.

Beginning in 1956, Dr. Martinez took a great interest in the basic problem of transplantation and in the years preceding his death witnessed a vast outpouring of scientific contributions in collaboration with Dr. Robert A. Good to problems of immunologic tolerance and the role of the thymus in immunobiology. Beyond his keen scientific mind and contributions, Dr. Martinez will be long remembered with deep affection for his warmth, kindness, and gentlemanly behavior. Not the least of his contributions to transplantation are the many students and colleagues whom he taught and helped in their own studies of tissue transplantation.

# Experiences with Renal Transplantation at the University of Minnesota Hospitals

W. D. KELLY, M.D., R. C. LILLEHEI, M.D., J. B. AUST, M.D.,
R. L. VARCO, M.D., A. S. LEONARD, M.D., C. MARKLAND, M.D.,
W. O. GRIFFIN, M.D., R. C. HERDMAN, M.D.,
R. L. VERNIER, M.D., A. F. MICHAEL, M.D.,
A. J. FISH, M.D., and J. LEVITT, M.D.
Minneapolis

A PROGRAM of renal allotransplantation was initiated at the University of Minnesota Hospitals nearly four years ago, stimulated by the pioneering achievements of other groups.[1–4] Our purpose in carrying out such a program has been to develop and evaluate new techniques and methods to enhance the success of transplantation procedures and to gain better knowledge of the pathogenetic mechanisms of homograft rejection.

The criteria for selection of a patient for renal allotransplantation are seen in Table 1. As will be seen subsequently, we have some times violated these requirements ourselves in the interest of trying a new approach. Perhaps the most difficult requirement is that of finding a suitable donor of a kidney. Kidney donors in our experience have come from two sources with one exception: the living blood relative and the cadaver. In one instance only, a living, unrelated donor was used. Donors must be in good general health and actively desirous of donating a kidney. In general, we take a very passive role in informing the patient and his family about the various sources of kidney for transplantation and rely on someone in the family coming forward for consideration as a donor. If no suitable donor is available, then a kidney from a cadaver is sought. The details of preoperative, operative, and postoperative management have been reported elsewhere.[5] Detailed physical examination and laboratory study of prospective recipients and donors are carried out. The donor blood type must be compatible with the recipient in regard to the ABO system; for example, a type O donor is a universal donor and a type AB recipient is a universal recipient. Prospective recipients generally require hemodialysis preoperatively, and sometimes this treatment is also necessary postoperatively because of ischemic injury or rejection.

The immunosuppressive regimen employed has been azathioprine (Imuran®) as the basic agent, with reservation of prednisone and actinomycin C for the treatment of rejection crises. Local irradiation of the graft with $Co^{60}$ has also been used in difficult situations to reverse rejection. Recently we have shifted over to the use of prednisone, beginning at the time of transplantation, to treat rejection prophylactically.

After a variable period of time following renal

TABLE 1

CRITERIA FOR SELECTION FOR RENAL ALLOTRANSPLANTATION

1. Terminal stage uremia
2. No serious systemic disease
3. No uncorrectable genitourinary infection or lower tract abnormality
4. Actively cooperative
5. Younger individuals favored
6. Have a donor

---

*From the departments of surgery, pediatrics, and medicine, University of Minnesota Medical School, Minneapolis.*

*This study was supported by U.S. Public Health Service grant AI 06063.*

transplantation, the recipient will attempt to reject the graft. In our experience this usually occurs between one and three weeks after the operation but may occur almost immediately or may occasionally not occur at all (Table 2).

The number, age, and sex of patients undergoing renal transplantation at the University of Minnesota Hospitals are seen in Table 3. A total of 31 kidneys from living donors were transplanted, and a total of 33 transplantation procedures were carried out entailing 38 cadaver kidneys. In 5 instances, 2 kidneys were transplanted to a recipient. The types of renal disease present in recipients of renal allotransplants are seen in Table 4. Most of the patients listed as having obstructive uropathy are also included in those shown to have chronic pyelonephritis.

The duration of function of transplanted kidneys and the survival of transplant recipients at various intervals of time are seen in Table 5. The figures for one year compare relatively closely with the average figures reported by the Transplantation Registry in July 1967. Our longest survivor is the first patient on whom we did a kidney homotransplant four years ago. He continues in good health with normal renal function.

The most common cause of failure of the transplanted kidney has been rejection (Table 6). The most common cause of death of transplant

TABLE 2

TIME OF ONSET OF FIRST REJECTION REACTION

| *Day* | *Living donor group* | *Cadaver donor group* |
|---|---|---|
| 1 | 5 | 3 |
| 2 | 2 | 2 |
| 3 | 2 | 1 |
| 4 | 2 | 1 |
| 5 to 7 | 2 | 4 |
| 8 to 12 | 4 | 3 |
| 13 to 20 | 4 | 6 |
| 21 to 30 | 3 | 1 |
| 31 to 40 | 1 | 1 |
| 41 to 60 | 1 | 0 |
| >60 | 1 | 2 |
| None recognized* | 3 | 1 |
| Not recognized† | 1 | 8 |

*Patient survived > three months without rejection reaction occurring

†Patient died or kidney lost early without clear evidence of rejection

TABLE 3

AGES AND SEX OF PATIENTS RECEIVING A RENAL ALLOGRAFT

| | *Living donor group* | *Cadaver donor group* |
|---|---|---|
| Sex: | Male 12, female 16 | Male 14, female 15 |
| Age: | Range: 7 to 49 years | 1½ to 53 years |
| | Average: 21 years | 26 years |
| | Median: 20 years | 21 years |

TABLE 4

TYPE OF RENAL DISEASE IN PATIENTS UNDERGOING RENAL ALLOTRANSPLANTATION

| | *Living donor group* | *Cadaver donor group* |
|---|---|---|
| Chronic glomerulonephritis | 21 | 15 |
| Chronic pyelonephritis | 7 | 11 |
| Obstructive uropathy | 6 | 7 |
| Polycystic kidney | 1 | 1 |
| Congenital hypoplasia | 0 | 1 |
| Renal vascular disease | 0 | 1 |

TABLE 5

FUNCTION OF RENAL ALLOGRAFTS AND SURVIVAL OF RECIPIENTS AT VARIOUS INTERVALS AFTER TRANSPLANTATION

| *Interval* | *Living donor* | *Cadaver donor* |
|---|---|---|
| | *Functioning kidney* | |
| 3 mo. | 18/31 (58%) | 17/34 (50%) |
| 1 yr. | 11/23 (48%) | 9/30 (30%) |
| 2 yr. | 6/15 (40%) | 4/16 (25%) |
| 3 yr. | 2/ 7 (29%) | 1/ 1 |
| Now | 15/31 (48%) | 9/32 (28%) |
| | *Surviving recipient* | |
| 3 mo. | 19/28 (68%) | 18/29 (62%) |
| 1 yr. | 11/22 (50%) | 10/27 (37%) |
| 2 yr. | 7/15 (47%) | 4/13 (31%) |
| 3 yr. | 2/ 7 (29%) | 1/ 1 |
| Now | 16/28 (57%) | 10/29 (35%) |

TABLE 6

MAJOR CAUSES OF RENAL FAILURE AFTER RENAL ALLOTRANSPLANTATION

| *Living donor group* | *Cadaver donor group* |
|---|---|
| Rejection—9 | Rejection—7 |
| Technical—1 | Ischemic injury—4 |
| Ischemic injury—1 | Urinary fistula—2 |
| Urinary fistula—2 | Perinephric abscess—1 |
| | Rupture of renal artery—1 |
| | Obstruction, blood clots—1 |

TABLE 7

MAJOR CAUSES OF DEATH AFTER RENAL ALLOTRANSPLANTATION

| *Living donor group* | *Cadaver donor group* |
|---|---|
| Sepsis—9 | Sepsis—14 |
| Intracranial hemorrhage—1 | Pulmonary embolus—1 |
| Aspiration pneumonia, gastrointestinal bleeding—1 | Acute pulmonary edema—1 |
| Myocardial infarction—1 | Exsanguination—1 |
| | Hyperkalemia—1 |
| | Diabetic acidosis—1 |

recipients has been sepsis (Table 7), although this list includes all complications, both early and late, in the course of the recipient after transplantation. Wound infections have primarily been caused by the staphylococcus, but infection with gram-negative organisms, particularly Klebsiella species and Escherichia coli, has been common. The latter organisms predominated among the many infections seen of the urinary tract. Bacteremia has frequently been associated with the prior development of a local complication or the appearance of leukopenia. The many complications associated with the transplanted kidney proper relate primarily to the development of urinary leakage, which occurred in 10 patients. Six complications were due to a blood clot and 4 to kinks in the ureter. One patient had an unrecognized bladder neck contracture and 1 a congenital stricture at the vesicoureteral junction.

We have seen a substantial number of patients with bladder outlet obstruction, severe pyeloureterectasis, and chronic renal failure. Initially, efforts to repair these abnormalities before transplantation were unsatisfactory because of poor tissue healing and persistent infection. Subsequently, a plan was adopted in which an ileac conduit (Bricker loop) was constructed at a preliminary stage to provide urinary drainage for the kidney later transplanted.[6] This procedure has been carried out in 8 instances, with 3 patients now surviving for three, twenty-three, and twenty-six months, respectively, with normal renal function and sterile urine. None of the failures were attributable to use of the ileac conduit but, rather, reflected the major use of cadaver donors.

Another section of our program evaluated antigen loading as a means to induce tolerance to the transplanted kidney in the human being. This is based upon observations in the mouse in which the administration of relatively large amounts of antigen derived from donor tissues has induced a state of tolerance to subsequent skin grafts from the donor strain. In the human being, we derived the donor antigen from living donors from the buffy coat of blood using a leukapheresis technique and from the liver of cadaver donors. In both instances the membranous fraction of disrupted cells, which is believed to contain histocompatibility antigen, was isolated and injected into recipients following renal transplantation from the donor. There were 8 treated and 9 controls in the living donor group and 9 treated and 10 controls in the cadaver donor group. The results obtained showed a modest delay in onset of rejection and a decrease in the number of secondary rejection reactions in the living donor group and no difference in the cadaver donor group as compared with controls. Survival of patients and transplanted kidneys was essentially the same for both groups. These findings are interpreted as showing little benefit from antigen loading in the induction of tolerance in the human being.

Histologic studies of renal biopsies have been carried out in well-functioning renal allografts in 5 patients at one year, in 1 patient at two years, and in 1 patient at three years. The details of this work are being published elsewhere.[7] Studies were made employing light and electron microscopy and immunofluorescent staining. In 3 patients focal deposits of beta 1C globulin of complement were present along the glomerular basement membranes. All patients showed electron micrographic abnormalities involving either the glomerular basement membrane or the mesangial matrix.

Other studies relating to measurement of detailed renal function and phosphorus excretion in 12 patients undergoing renal allotransplantation are being reported elsewhere.[8] The principal observations have been a striking reduction in filtration fraction related to a disproportionate decrease in glomerular filtration rate (GFR); evidence of an unusual degree of phosphorus excretion after transplantation which may be attributable to some degree of autonomicity of parathyroid secretion; and the finding of a remarkable stability of GFR, renal plasma flow, and tubular resorption of phosphorus once a graft is well established in its new host.

## SUMMARY

Experience in renal allotransplantation at the University of Minnesota Hospitals over the past three and one-half years is described. Twenty-eight patients received their kidneys from living donors and twenty-nine patients received them from cadaver donors. Three-month survival was seen in 68% of the living donor group and in 62% of the cadaver donor group. The corresponding figures at one year are 50 and 37%, respectively. A high incidence of complications was seen. The principal cause of renal failure was rejection, and the major cause of death was sepsis. Efforts at inducing a state of immunologic tolerance by antigen loading were unsuccessful.

The use of an ileac conduit with renal transplantation, the results of renal biopsies in well-functioning allografts, and studies of renal function are described.

(Continued on page 170)

# Experimental Suppression of Allograft Rejection: Background and Application

C. F. ZUKOSKI, M.D.

Nashville

KIDNEY TRANSPLANTATION is of great interest to patients with advanced renal disease and to clinicians. The search for a successful type of therapy for these chronically ill uremic patients has been intensified in the past few years. In a few medical centers in this country and abroad, chronic peritoneal dialysis and hemodialysis have been employed with varying degrees of success in prolonging life for a limited number of patients. Clinical success with renal transplantation has progressed in the past three years. This report will describe the experimental background and the application of these investigative efforts to clinical renal transplantation.

A kidney removed from an individual and transplanted back into the same individual (autograft) or his identical twin will function normally to prolong life indefinitely, but a kidney transplanted from one individual to another (allograft) will function satisfactorily a relatively short period of time and then cease to function. The biologic process which causes these kidneys to stop functioning is called the allograft reaction or rejection. This rejection process was determined to be an immunologic process by the experiments of Medawar in 1944.[1] The recipient recognizes the allografted tissues as being foreign or not part of "self" and begins to form antibodies which destroy the graft. The rapidity of the rejection process depends primarily upon the disparity of the genetic relationship of the donor and recipient and the species of animal being studied. (A more detailed description of the allograft rejection may be found in: Jones, C. J.: Transplantation and immunity. Surg. Gynec. Obstet. 120:1317, 1965.)

In a primary canine renal allograft, the transplanted kidney will produce good urine for five to six days and then urine flow ceases rather suddenly. This cessation is associated with a concomitant fall in renal blood flow. A bilateral nephrectomized renal allografted dog without any therapy will live on the average of about nine days. A second graft from the same donor-recipient relationship ceases to function in twenty-four to forty-eight hours (an accelerated rejection process). Rejection of a primary renal allograft is characterized by an accumulation of pyroninophilic cells (hemocytoblasts or immunocytes which arise from lymphoid organs of the recipient) which begin to appear in the cortex of the kidney by day 2 or 3. These hemocytoblasts accumulate around the basement membranes of the glomeruli and the walls of the small blood vessels. By day 5, the proximal tubules have been lost in patchy areas of the cortex due to thrombosis of the peritubular capillaries. Renal function ceases rapidly thereafter.

The experimental efforts to prolong canine renal allograft survival have been many, none universally successful today. Total body irradiation has been studied by Dempster[2] and Baker and Gordon.[3] They found that 200 to 250 r failed to prolong renal allograft function. Hume and associates[4] demonstrated that 1,200 to 1,500 r would prevent the appearance of the allograft rejection process, but none of the animals survived the irradiation due to bone marrow depression. The reports of Merrill and associates[5] and Hamburger and associates[6] indicated that sublethal whole body irradiation may prolong human renal allografts for a period of years. The clinical use of whole body irradiation in the United States has been discarded due to the very high incidence of associated bone marrow depression resulting in agranulocytosis and death.

In 1959, Schwartz and Dameshek[7] demonstrat-

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ed that 6-mercaptopurine (6-MP) would produce immunologic tolerance for a purified protein antigen in adult rabbits. The rabbits were given human serum albumin (HSA) intravenously and then given 6-MP daily beginning on the day of antigen injection and for fourteen days thereafter. No antibody to the HSA developed. Another injection of HSA six weeks later without further 6-MP also failed to elicit antibody formation to HSA, whereas an accelerated response would have been achieved in a set of control animals which had received no 6-MP at the first injection of antigen. If six weeks later the rabbits were injected with HSA and bovine gamma globulin (BGG), they produced no antibody to HSA but did so for BGG. Thus, Schwartz and Dameshek produced in the adult rabbit an acceptance of the foreign antigen without any immunologic response by the recipient—a state defined as immunologic tolerance—through the administration of 6-MP. This tolerance was specific for the HSA and the animal was not immunologically incompetent to all antigens. If such a nonresponsive state could be produced in the dog for renal allografts (which contain many antigens), then permanent renal function could be achieved. This report of Schwartz and Dameshek was the basis on which the current clinical immunosuppressive regimens were developed.

Independently, Calne[8] and Zukoski and associates[9] reported that 6-MP administered to bilaterally nephrectomized renal allografted dogs caused a significant twenty-day prolongation of allograft function. The toxicity of 6-MP—bone marrow depression, jaundice, and gastrointestinal hemorrhage—caused a further search for other antimetabolites (analogues of purines and pyrimidines) which might be less toxic to dogs and yet prolong renal function.[10,11] From the many drugs and drug regimens tested, azathioprine (Imuran®), an imidazolyl derivative of 6-MP, has proved the best single drug to date. This drug prolonged renal function for a mean survival time of thirty-five days. These antimetabolites allowed the development of the allograft reaction over a protracted period of time instead of a few days as occurred in the untreated animals. No predictable pretransplant result was possible with these immunosuppressive drugs in dogs. By daily adjustment of the immunosuppressive therapy, the toxicity of the medication on the bone marrow and gastrointestinal tract can be more easily controlled than with the single massive injury caused by whole body irradiation. Once a leukopenia develops, a smaller dose of azathioprine will usually allow for complete marrow recovery without loss of immunosuppressive control.

Immunosuppressive antimetabolites such as 6-MP or azathioprine act to interfere with the metabolic inclusion of adenine in the ribose and deoxyribose nucleic acid for the buildup of rapidly dividing cells. An antigenic stimulus of any type, whether purified protein antigen or organ transplant, causes a marked proliferation of the cells in the reticuloendothelial system, especially in lymph nodes and the spleen. These rapidly dividing cells form antibodies to the antigenic stimulus. Therefore, the antimetabolites prevent to more or less of a degree the biochemical reactions which normally allow these cells to proliferate and to synthesize antibody. Thus, these drugs assist the allograft to survive longer. The review of Hitchings and Elion[12] gives a more detailed explanation of the mode of action of these antimetabolites.

Pierce and associates[13] reported the achievement of immunologic tolerance for a canine renal allograft in a dog treated with 6-MP. Zukoski and associates have achieved tolerance for renal allografts by the administration of 6-methyl mercaptopurine[14] and prednisolone.[15] These tolerant animals were all treated for a period of several months with their immunosuppressive regimen and then the medication was discontinued. Renal function continued for many months thereafter suggesting that the recipient had accepted the allograft permanently. That this prolonged acceptance may not be immunologic tolerance was suggested by the 6-methyl mercaptopurine dog of Zukoski and Ende. This dog lived seven hundred thirty-nine days only to die of membranous glomerular nephritis in the transplanted kidney.[16] The development of this nephritis is thought to be of an immunologic basis.

Prednisolone is perhaps as good an immunosuppressive agent as azathioprine. Prednisolone acts through a combination of factors, such as the destruction of lymphocytes, lymph node atrophy, and suppression of antibody formation to purified protein antigens, in prolongation of skin allografts. Due to its harmful side effects at the dosages required for therapeutic effects in man (20 to 400 mg. per day), prednisolone cannot be used for long periods of time.[17]

The present day management of clinical renal allografts consists of azathioprine, 3 to 5 mg. per kilogram of body weight, and prednisolone, 10 to 80 mg. per day, administered daily for the basic therapy to suppress the allograft reaction.[18,19]

The human renal allograft rejection process follows a similar but more drawn out course than that of the dog. Hume and associates[20] reported that untreated renal allografts in man were rejected from three weeks to five and one-half months. The more recent extensive clinical renal allograft experience has indicated that allograft rejection can begin as early as a few hours or up to weeks or months after transplantation. Such a rejection process or crisis in man is associated with unexplained fever, decreased urine volume, increased protein in the urine, decreased creatinine clearances, tenderness over the denervated transplanted kidney, and the appearance of "round cells" in the urine. These cells are similar to those seen in the cortex of the transplant. No one laboratory or clinical test for rejection has proved entirely reliable. Even a kidney biopsy is not reliable, for the rejection process is very spotty in the renal cortex at its onset. The unexplained fever, tenderness over the transplant, and "round cells" in the urine are probably the most reliable. Once the diagnosis of a rejection crisis has been made, prompt vigorous therapy can reverse this immunologic destruction of the renal transplant temporarily. Local irradiation of 150 to 200 r to the transplant[19] every other day for 3 or 4 treatments will help in some instances. Actinomycin C is an agent that appears to be able to partially reverse a rejection crisis.[18,19] In most clinical cases, all or a combination of these approaches are used. In the majority of cases, a satisfactory recovery can be achieved through these therapeutic methods before drug toxicity develops. In some cases, however, a rejection crisis cannot be reversed by any of these adjuncts to the basic immunosuppressive therapy without producing lethal toxicity in the patient. If the rejection process cannot be reversed without toxicity, perhaps the patient should be allowed to reject the allograft and have a second transplant at a later date. This has been done without apparent second set rejection in several instances in the past year as the second donor is unrelated to the first.

Prolongation of renal allograft function in man for two to three years is a significant achievement for these immunosuppressive agents. (A description of transplantation for patients is presented by Moore, Dr. F. D.: The development of tissue transplantation. In: Give and Take. Philadelphia and London: W. B. Saunders Co., 1964.) The genetic relationship between the human donor and recipient plays a part in these results, but cadaver kidneys also have functioned over two years in man.

The clinical reports in this symposium point out the need for a better understanding of the immunological phenomena involved in the allograft rejection process and still better modes of therapy to achieve the ultimate goal of organ transplantation: adult acceptance of foreign tissue or immunological tolerance.

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Supported in part by National Institutes of Health grant No. AM-07317

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# The Histopathologic Features of Rejection in the Allogeneically Transplanted Kidney in Dog and Man: A Review

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In recent years great interest has been shown in the problems of allogeneic transplantation of tissues and organs (grafts from one individual to another of the same species) and, particularly, in those of clinical renal transplantation. Despite the amount of reported work on various aspects of transplantation, there remains a lack of full understanding of the immunologic mechanisms involved in the rejection of allogeneic transplants and the exact mechanisms of the death of allografts. In the past, emphasis has been placed on the significance of the histologic finding of the local inflammatory cellular response that occurs in allogeneically transplanted tissues or organs[1,2] and particularly on the role of lymphocytic and pyroninophilic cells as the effectors of rejection. More recently, however, Stetson,[3] among others, has emphasized the possible significance of circulating antibody in the immune response of the host to the grafted tissue. Since the greatest clinical interest has been shown in the fate of allogeneic grafts of kidneys, it is proposed to review the morphologic features of first-set rejection of such kidneys in which, of course, vascularization of the graft is achieved by the surgical technique of transplantation.

From a histopathologic study of the allogeneically transplanted kidney in the dog, including the use of electron microscopy, Kountz and co-workers[4] considered the initial point of the immunologic attack to be the vascular endothelium of the small intertubular vessels. They described the separation of adjacent vascular endothelial cells and the resulting extravascular escape of erythrocytes, plasma cells, lymphocytes, cell debris, and phagocytes as well as the destruction of the intertubular vessels. They considered that these changes resulted in marked reduction of renal blood flow, leading to massive tubular necrosis and, ultimately, to destruction of the entire kidney. These workers concluded that the destruction of the allogeneically transplanted kidney was an ischemic process resulting from the progressive destruction of small blood vessels by immature plasma cells. More recently, Shorter and co-workers,[5] in a similar study, supported the observation that the destruction of the allograft was an ischemic process and that the progressive separation of vascular endothelial cells occurred initially associated with the diapedesis of inflammatory cells. However, these authors found no histologic evidence to confirm or deny the suggestion made by Kountz and associates[4] that the dissolution of the vessel walls was caused by immature plasma cells. They concluded that, although the initial morphologic changes occurred in the vessel walls, it could be speculated that the initiating mechanism might be humoral rather than local and cellular in origin and that the inflammatory cellular response could be a result as well as a cause of the vascular damage.

The importance of vascular injury in the mechanism of rejection of allogeneically transplanted kidneys resulting from an immunologic response by the host is apparent from the findings of both these groups of workers,[4,5] but the current lack of exact knowledge of the pathogenesis of the morphologic changes is illustrated by the differences in the opinions expressed. With these reservations in mind, it is the intention of this review simply to consider the histopathologic changes that have been seen in light microscopic studies of human and canine allo-

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geneically transplanted kidneys in untreated recipients and to compare these with the findings in similar kidneys in recipients treated by immunosuppressive agents in attempts to overcome rejection.

### HISTOLOGIC FINDINGS IN CANINE ALLOGENEICALLY TRANSPLANTED KIDNEYS IN UNMODIFIED RECIPIENTS

In the untreated, allogeneically transplanted kidney in the dog, the histologic changes seen in the first two days after transplantation are similar to those seen in autoplastic transplants (grafts of kidneys in which the donor is also the recipient) and consist of focal areas of vacuolation of epithelial cells lining the proximal and distal convoluted tubules.

At three to four days, scattered foci of inflammatory cells appear in the renal cortex, some of which are related to vessels (Fig. 1), some to Bowman's capsules (Fig. 2), and some to convoluted tubules. The types of inflammatory cells include small lymphocytes, nonpyroninophilic mononuclear cells, and small numbers of pyroninophilic plasma cells.

After five days, when the signs of rejection become apparent clinically, inflammatory cellular infiltration and edema are diffuse and severe in the cortex, the predominant cell type being the nonpyroninophilic mononuclear cell, although small lymphocytes, plasma cells, and polymorphonuclear leukocytes also are present in the inflammatory cellular population. Degenerative changes persist in the tubular epithelium, but the glomeruli appear normal at this time.

At six to seven days, by which time the animals usually are markedly uremic, the kidneys show evidence of focal infarction with diffuse cortical infiltration by inflammatory cells (Fig. 3), predominantly of the nonpyroninophilic mononuclear variety. Foci of interstitial hemorrhage and polymorphonuclear cells also may be seen in the medulla at this time interval after transplantation. Vasculitis with fibrinoid change occurs in some small arteries, and apparent increased glomerular cellularity is present owing to the prominence of all types of glomerular cells and to infiltration by nonpyroninophilic mononuclear inflammatory cells. This stage is followed rapidly by total infarction of the kidney which, in the untreated dog, is usually complete by the ninth day. Mannick and co-workers[6] have shown that this process may be delayed in dogs rendered uremic before transplantation and that the transplanted kidney may survive from fifteen to twenty-three days before rejection is complete, apparently as a result of the suppressive effects of uremia on the immune response of the host. The histologic changes in the kidney are the same, but the cellular infiltration occurs later.

### HISTOLOGIC CHANGES IN HUMAN ALLOGENEIC RENAL TRANSPLANTS IN UNMODIFIED RECIPIENTS

In 1955 Hume and co-workers[7] studied nine uremic patients in whom allogeneic transplantations of kidneys were carried out in the absence of any significant immunosuppressive treatment to the recipient. The general histopathologic picture described is similar to that found in the dog, but the changes appear more slowly, apparently as a result of the immunosuppressive effects of chronic uremia in the recipients. In illustration of this, the histologic findings seen in the transplanted kidneys in nonuremic dogs approximately five days after transplantation are comparable to those seen in allografted kidneys in Hume's uremic patients after thirty-seven days.

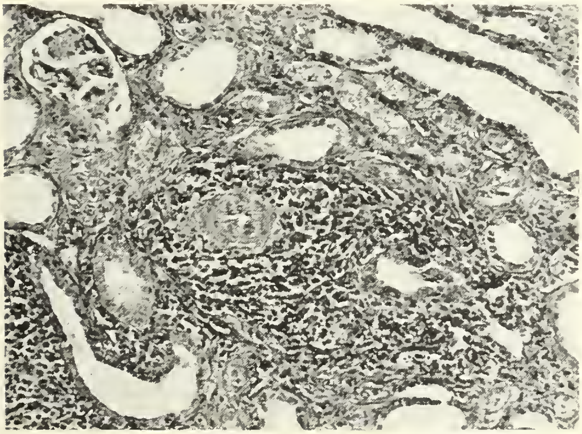

Fig. 1. Section from allogeneically transplanted canine kidney in untreated recipient four days after transplantation; perivascular focus of inflammatory cells. Hematoxylin and eosin, × 170

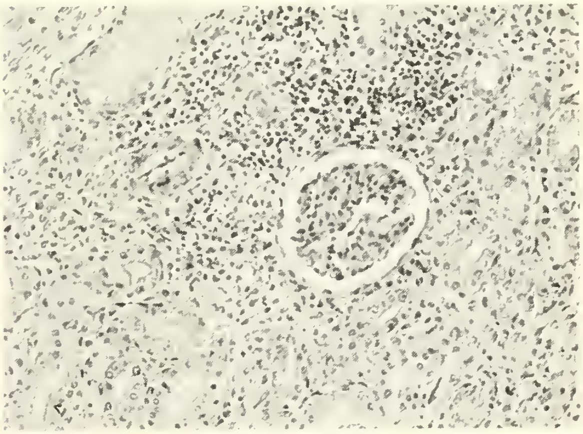

Fig. 2. Section from allogeneically transplanted canine kidney in untreated recipient four days after transplantation; inflammatory cellular infiltration in relationship to Bowman's capsule. Hematoxylin and eosin, × 170

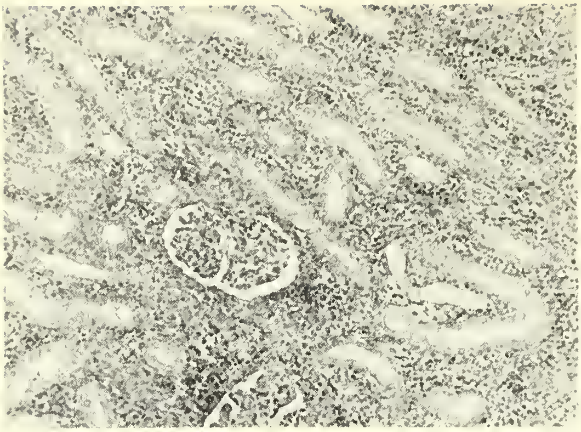

Fig. 3. Allogeneically transplanted canine kidney in untreated recipient six days after transplantation; inflammatory cellular infiltration is diffuse and severe, and early infarction is occurring. Hematoxylin and eosin, × 110

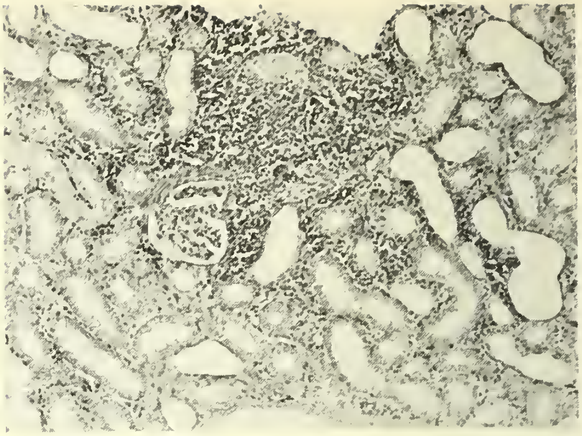

Fig. 4. Section from allogeneically transplanted canine kidney two months after transplantation in recipient treated with Imuran showing inflammatory cellular infiltration in the cortex. Hematoxylin and eosin, × 100

### HISTOPATHOLOGIC CHANGES IN ALLOGENEICALLY TRANSPLANTED KIDNEYS IN DOGS TREATED WITH AN IMMUNOSUPPRESSIVE AGENT

Even in the presence of immunosuppressive therapy with azathioprine (Imuran®), rejection of the allogeneic kidney in the dog may occur within the first two weeks after transplantation, and in these animals, the histologic changes in the kidney are identical to those seen in the untreated recipient.

In canine recipients treated successfully with Imuran in order to suppress the acute rejection of the allogeneically transplanted kidneys, the histologic changes during the first seven days after transplantation consist simply of focal degenerative changes in the epithelium of convoluted tubules similar to those seen in autoplastic transplants.

After seven days, however, focal accumulations of inflammatory cells are seen in relationship to small cortical vessels, glomeruli, and convoluted tubules, the cells being predominantly nonpyroninophilic mononuclear in type. Degenerative changes persist in the epithelia of many convoluted tubules with some evidence of regeneration as shown by the presence of mitotic figures and the heaping up of epithelial cells.

At eleven to twelve days, in addition to the presence of foci of inflammatory cells in the cortex, focal fibrinoid changes may be seen in occasional glomerular tufts and hilar arteries. Similar histologic changes persist and, after approximately 2 months, in addition to the foci of inflammatory cells in the cortex (Fig. 4), there is evidence of medial thickening with focal areas

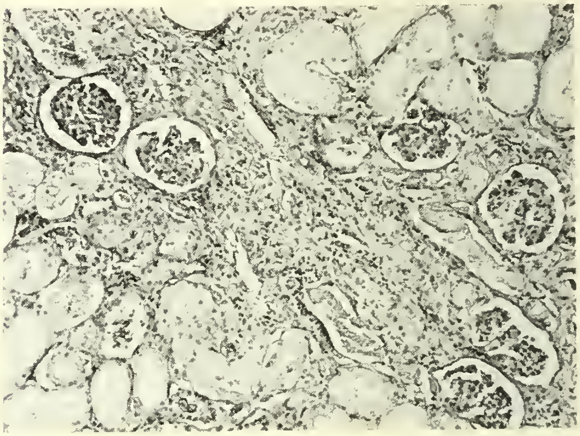

Fig. 5. Allogeneically transplanted canine kidney seven months after transplantation in recipient treated with Imuran; section shows area of cortical fibrosis. Hematoxylin and eosin, × 100

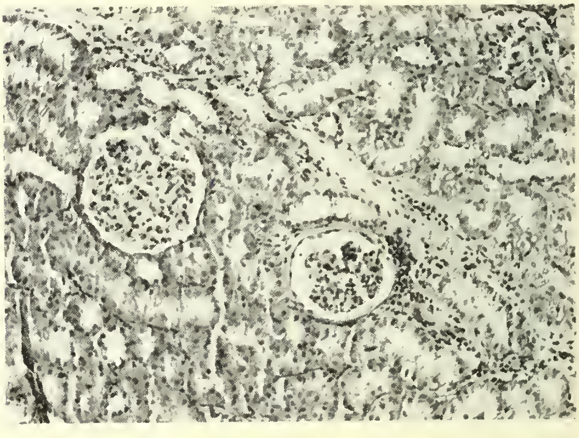

Fig. 6. Allogeneically transplanted canine kidney ten months after transplantation in recipient treated with Imuran; section shows focal inflammatory changes. Hematoxylin and eosin, × 120

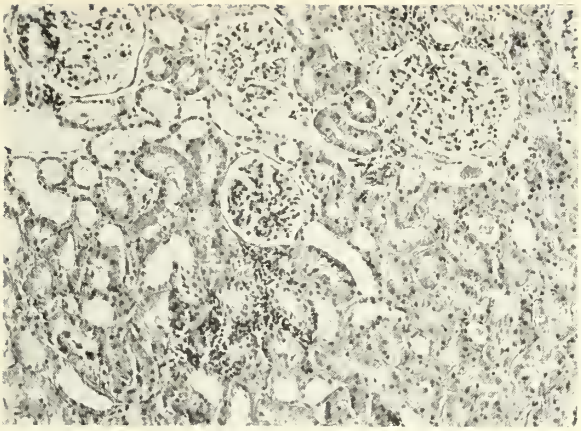

Fig. 7. Section from allogeneically transplanted canine kidney twenty-one months after transplantation and three months after withdrawal of Imuran from recipient; section shows focal inflammatory cellular infiltration. Hematoxylin and eosin, × 110

of hyaline change and intimal proliferation in some small arteries and arterioles.

From four to seven months, small foci of inflammatory cells composed of small lymphocytes, nonpyroninophilic mononuclear cells, and plasma cells persist, particularly in relationship to small vessels, and foci of interstitial fibrosis are seen in the cortex (Fig. 5). Occasional glomeruli may show hyalinization in these fibrotic areas, and focal tubular atrophy is a feature, the tubules being lined by flattened epithelium. A few collecting tubules in the medulla may show focal calcification.

From seven to ten months, similar histologic changes persist (Fig. 6) and, in addition, focal membranous changes may be found in a few glomerular tufts.

In two dogs who had allogeneic renal transplantation with the administration of Imuran alone, the histologic appearances at eighteen months were not markedly different from those seen after ten months except for some increase in the focal membranous changes in glomeruli. These two animals have survived for two years and, at the present time, six months after withdrawal of Imuran, have retained good renal function. The histologic changes in the kidneys three months after the withdrawal of Imuran (that is, a total of twenty-one months after transplantation) showed no significant alterations when compared with those seen after ten months (Fig. 7). These histopathologic changes occur in the transplanted kidney whether the animal has shown clinical evidence of rejection or not.

In summary, therefore, foci of mononuclear cells, including small numbers of pyroninophilic cells, appear and persist in the cortex of the allogeneically transplanted kidney in dogs treated with the immunosuppressive drug Imuran even in the presence of good renal function, whereas, focal vascular changes occur in arteries and arterioles, focal membranous changes develop in the glomerular tufts, and focal areas of fibrosis are seen in the renal cortex.

### HISTOLOGIC FINDINGS IN ALLOGENEICALLY TRANSPLANTED HUMAN KIDNEYS IN RECIPIENTS MODIFIED BY IMMUNOSUPPRESSIVE THERAPY

A large series of human allogeneic transplants of kidneys treated with immunosuppressives (including Imuran, corticosteroids, and actinomycin C) has been reported from the University of Colorado Medical Center, and the histologic findings in the kidney of these patients have been reviewed recently by Porter.[8] This author has considered the findings in several groups of patients with differing clinical behavior including: [1] patients in whom the transplant did not function at all because of immediate rejection, [2] patients in whom at least one episode of rejection occurred but who were treated successfully for this episode by the immunosuppressive agents, and [3] patients in whom no clearly recognizable clinical episode of rejection occurred.

In the two patients in whom rapid cessation of blood flow through the allogeneically transplanted kidney occurred and was interpreted as a result of immediate rejection of the graft, histologic sections of the kidneys were normal except for areas of congestion and aggregation of red cells, especially in the glomeruli and small arterioles; however, in both patients the transplanted kidneys were removed from the recipients within three hours.

In two kidneys in Porter's series in which acute failure of the transplanted kidney occurred and which was attributed by him to blood group incompatibility between the donors and the recipients, sludging of red cells is described in glomerular capillaries.

In contrast, in one of our patients in whom rapid failure of the allogeneically transplanted kidney occurred in the absence of blood group incompatibility or prolonged ischemia and was attributed to immediate rejection, the histologic findings after one week were those of massive tubular necrosis and resembled the findings ascribed by Porter to the effects of prolonged ischemia occurring in the surgical process of transplantation.

In the group of patients reviewed by Porter in which clinical rejection occurred some days after transplantation, the histologic changes in

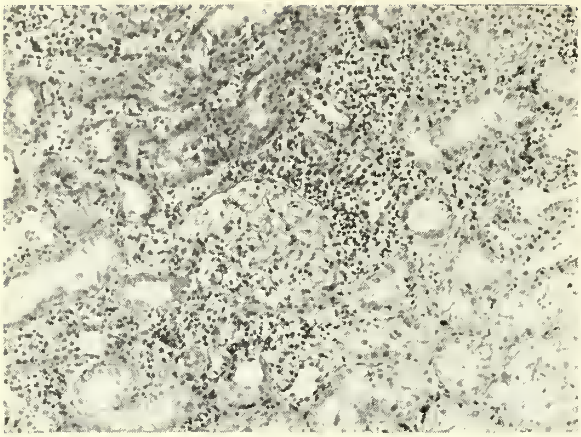

Fig. 8. Section from allogeneically transplanted human kidney six months after transplantation; recipient treated with Imuran and prednisone; focal area of inflammatory cellular infiltration in the cortex. Hematoxylin and eosin, × 100

the kidneys at the height of rejection are similar to those seen in both canine and human untreated renal allografts undergoing rejection. Cellular infiltration of the renal cortex is present in the majority of instances but is consistently less in intensity than in the untreated canine and human allografts. Widespread necrosis of tubular epithelium occurs with evidence of active regeneration. Porter stresses the presence of fibrinoid necrosis in the walls of some of the afferent arterioles and in intertubular arteries in 12 of 14 transplants with episodes of clinical rejection, whereas fibrinoid necrosis is a feature in glomerular tufts in the 4 most severe cases. Swelling of endothelial cells lining arterioles is present in 6 patients, and fibrous thickening or the deposition of fibrin and platelets is found in the intima of interlobular arteries in approximately half of the patients. Porter does not document the occurrence of these vascular changes earlier than thirty-four days after transplantation. In 8 patients surviving for as long as one hundred seventeen days after a clearly recognizable episode of rejection, Porter describes the persistence of focal cellular infiltrates in the renal cortex, often related to peritubular capillaries, the cells being predominantly lymphocytes and mature plasma cells. Fibrinoid necrosis in small numbers of arteriolar walls is described in 2 of these 8 patients, while 4 of the transplanted kidneys show intimal thickening of some of the intertubular arteries. Atrophic tubular changes are present in 6 kidneys, the tubules being lined by flattened epithelium. Where tubular atrophy is noted, the interstitium of the kidney is fibrotic. We have found similar histopathologic changes (Fig. 8) in allogeneically transplanted kidneys in 3 patients treated with Imuran, prednisone, and actinomycin C who were observed for one year; 2 of these showed clinical episodes of rejection, while the third did not. We have noted that tubular changes and interstitial fibrosis are the most striking features.

In 3 patients in the Denver series who did not have clinical evidence of rejection after ten, twenty, and thirty-eight days, respectively, all the kidneys show focal infiltration by inflammatory cells. In the kidney examined after thirty-eight days, one of the interlobular arteries shows accumulation of fibrin and platelets on the intima, and areas of interstitial fibrosis are seen in the kidney.

### UNUSUAL HISTOLOGIC MANIFESTATIONS IN ALLOGENEICALLY TRANSPLANTED HUMAN KIDNEYS

Hume and co-workers[7] described the development of the histologic features of proliferative glomerulonephritis in a transplanted kidney in one patient in whom allogeneic cadaveric renal transplantation was attempted in the absence of significant immunosuppressive therapy. The recipient was suffering from polyarteritis nodosa with anuria. The histologic changes in the transplant were characterized by a marked crescent formation and the absence of inflammatory cellular infiltration. These workers interpreted the histologic findings as representing the development of glomerulonephritis in the transplanted kidney rather than a manifestation of rejection. Recently, Hallenbeck and co-workers[9] noted the occurrence of a similar histologic picture in a transplanted kidney in a patient who received a kidney from her mother. The patient was suffering from diffuse sclerosing glomerulonephritis with anuria, and the primary disease had shown a rapid clinical course. The recipient was treated with Imuran and prednisone, but renal failure developed a few days after transplantation. As in Hume's case, crescent formation was a prominent feature in the transplanted kidney, and these authors discussed the possible significance of these unusual histologic findings in a renal allograft.

The occurrence of glomerulonephritis in kidneys transplanted from an identical twin to another who had the disease, a situation in which the tissue is isogeneic and not subject to rejection, is well recognized and indicates that the disease of the host can involve the transplant. However, whether the histologic changes of proliferative glomerulonephritis seen in these two allogeneic transplants represent an unusual histologic form of rejection or the occurrence of glomerulonephritis remains uncertain at present. Since glomerulonephritis and rejection of allogeneic tissue are both held to be results of immunologic phenomena, it is not surprising, perhaps, that there should be difficulties in distinguishing between them on histopathologic grounds alone in some cases.

## CONCLUSIONS

Rejection of renal allografts both in man and in dogs is characterized by the occurrence of inflammatory cellular infiltrate in the renal cortex, which is predominantly mononuclear in type and which, initially, is perivascular and peritubular in site. In the untreated transplant, this is followed rapidly by severe ischemic changes with ultimate infarction. It is noteworthy that if the acute phase of rejection can be overcome by the use of immunosuppressive agents, foci of inflammatory cells persist in the renal cortex, some degree of occlusive vascular change develops, and foci of fibrosis are found in the cortex. Existing evidence indicates that the primary site of the morphologic changes of rejection in the allogeneically transplanted kidney is vascular and that the destruction of the graft is an ischemic process which, in the unmodified recipient, is rapidly progressive and leads to infarction of the transplant. In recipients in whom the initial acute process of rejection is modified by immunosuppressive therapy, rejection is a slower process with episodes of renal damage followed by fibrosis, resulting in relentless destruction of the transplanted kidney. Based on histopathologic observations, the immunosuppressive agents in current use probably do not overcome completely the pathologic process of rejection but only slow it down, resulting in a subacute or chronic form and ultimately leading to failure of the renal transplant weeks, months, or years after its placement in the recipient.

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This investigation was supported in part by a grant from the Louis W. and Maud Hill Family Foundation.

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# Transplantation of the Lung

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Success with suppression of the homograft rejection response in patients with kidney transplants[1-3] has kindled the interest in transplantation of other organs. Attempts at human lung,[4,5] heart,[6] and liver[7,8]* homotransplantation have been made but unfortunately have not been successful. Demikhov[9,10] was the first to attempt transplantation of lung tissue when he homografted the right lower lobe in six dogs in 1947. Since then the various problems of lung reimplantation and homotransplantation have been evaluated in experimental studies which have been done mainly in the dog. A collective review of experimental lung transplantation has been recently published by Trummer.[11]

Our results of reimplantation of the dog lung[12,13] have been disappointing, as has been the experience of others. The thirty-day operative mortality in 93 dogs was 48%, with thrombosis of the atrial cuff, infection in the reimplanted lung, edema in the reimplanted lung, and breakdown of the bronchial anastomosis being the main causes of death. Bronchograms of the reimplanted dog lung were abnormal. There was generalized ectasia of the bronchi with loss of normal taper toward the periphery. Various lung segments or lobes, particularly the left upper lobe, were incompletely expanded. Simultaneous differential bronchospirometry showed that there was depression of both ventilation and oxygen uptake of the reimplanted dog lung, the oxygen uptake being more depressed than the ventilation. Function did not return to normal when studied for periods of up to two years, and in a group of 16 dogs only one survived contralateral pneumonectomy after left lung reimplantation. Death was due to the frequent development of pulmonary hypertension, pulmonary edema, hypoxia, and hypercapnia.

Some of the problems of experimental lung reimplantation appeared to be related to the dog's anatomy and physiology. The dog has a narrow thorax, a rudimentary mediastinum, a lung which is prone to atelectasis, and an increased blood coagulability. The Kenya baboon, a subhuman primate, was chosen for a comparative experimental lung transplantation study because of his closer similarity to man.[12,13]

The thirty-day operative mortality following lung reimplantation in 26 baboons was 42%, with iatrogenic deaths, thrombosis of the pulmonary artery anastomosis, and infection in the reimplanted lung the main factors in mortality. Complications from the bronchial anastomosis were minimal and the bronchial tree was normal on bronchography. Differential bronchospirometric studies demonstrated that the ventilation and oxygen uptake of the reimplanted baboon lung were usually normal within two to four weeks postoperatively and remained normal. Ten of 12 baboons survived contralateral pneumonectomy at various periods after left lung reimplantation and, in contrast to the dog, pulmonary hypertension, pulmonary edema, hypoxia, and hypercapnia did not usually develop. Intracardiac pressures and blood gas analyses eight and one-half to twenty months after contralateral pneumonectomy were normal.[14]

Several studies have been reported on homotransplantation of the canine lung using various measures for suppression of the immune response.[11] Although occasional dogs have been long-term survivors, satisfactory function of the homotransplanted lung has not been achieved consistently on long-term follow-up studies. This is not surprising in view of the fact that the reimplanted lung in the dog infrequently regains its normal function.

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*The liver has now been successfully homotransplanted in the human by Dr. Thomas Starzl and associates of Denver.

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Generally the successful homovitaltransplantation of organs is dependent upon the satisfactory management of three factors: [1] technical problems, [2] the procurement and storage of satisfactory organs, and [3] the control of tissue rejection. The technical problems of lung transplantation have been quite well worked out. Were the problem of tissue rejection to be solved today we would still be faced with the obstacle of obtaining satisfactory organs for human lung homotransplantation. At this time heterografts are not feasible.[15–17] A satisfactory implantable artificial lung has not been developed. It does not seem reasonable to subject a healthy human being to a pneumonectomy or a lobectomy, due to the magnitude of the procedure and because of the somewhat uncertain status of a person living with only one lung for a long time. Human cadavers are the most acceptable source of lungs.

How long after death is the cadaver lung suitable for transplantation into another human being? Several studies have evaluated the ischemic time of the animal lung.[18–20] There have been many variables such as clamping the hilar structures in situ, the use of heparin, and hypothermic perfusion of the lung immediately after extirpation. These experiments do not simulate the circumstances that will exist from the time of death until a lung can be harvested from a human cadaver.

A study was done in which the baboon lung was excised and stored at room temperature for a period of one, two, or three hours.[21] No heparin was used. Following the period of storage the lung was then perfused with a cold solution of low molecular weight dextran and then reimplanted. In some instances the baboon lung tolerated an ischemic time of up to four hours with return of normal function and survival of the animal after subsequent contralateral pneumonectomy. There was a direct relationship between the length of the ischemia and the time required for the baboon to recover its normal function. The baboon lung is relatively resistant to ischemia for several hours at temperatures ranging between that of the body and the room.

A large experience with immunosuppressive therapy in human renal homotransplantation has been accumulated and it seems reasonable that these same principles can be utilized to advantage regarding the lung. Clinical application of human lung homotransplantation merits strong consideration in light of the encouraging results of reimplantation studies in the baboon and the progress which has been made recently in human renal homotransplantation.

There have been two cases of human lung homotransplantation. Hardy and colleagues[4] performed the first homotransplantation of the human lung and controlled rejection with azathioprine, prednisolone, and cobalt irradiation to the mediastinum and thymus. Preoperatively there was systemic arterial oxygen unsaturation which became normal postoperatively. An angiocardiogram showed that the homografted lung was being perfused. The patient died on the eighteenth postoperative day of renal failure. There was no evidence of rejection of the lung at autopsy. Magovern and Yates[5] reported the second case of human lung homotransplantation which terminated fatally eight days later. At autopsy the lung homograft showed extensive pneumonia, and definite evidence of rejection was difficult to evaluate.

With the increase in crippling chronic pulmonary diseases, the need for homotransplantation of the human lung or a lobe is obvious. Chronic obstructive emphysema is now the leading cause of pulmonary disability[22,23] and figures indicate that as many people succumb to pulmonary emphysema as to cancer of the lung.[23] When resection of a curable pulmonary neoplasm results in a decreased pulmonary reserve and pulmonary hypertension which has a poor prognosis, homotransplantation of pulmonary tissue should be considered. Similarly when extensive resection for bilateral bronchiectasis results in insufficient functioning of pulmonary parenchyma, a lung homograft would be indicated. In primary pulmonary hypertension which has a grave prognosis, homotransplantation of pulmonary tissue would be the ideal answer. In congenital heart disease with secondary pulmonary hypertension which is irreversible, a lung homotransplant would allow correction of the cardiac defect with an acceptable mortality and subsequent long-term survival.

Intractable asthma is a formidable problem resisting most forms of therapy. Surgery on the autonomic nervous system has been tried and has failed, though the status of glomectomy is as yet undetermined.[23] It is now appreciated that denervation of a lung can only be accomplished by surgical removal and reimplantation. This may turn out to be one of the more rewarding aspects of lung reimplantation.

## SUMMARY AND CONCLUSIONS

The technical aspects of lung reimplantation are satisfactory, and it has been shown that the experimental results in the baboon are far superior to those in the dog. The ischemic time of the baboon lung is relatively long, which makes it possible to harvest a satisfactory organ from the human cadaver. Progress has been made in the control of homograft rejection.

Lung homotransplantation should be considered in disabling pulmonary diseases in which the course is progressively that of deterioration despite good medical management, and in those pulmonary diseases in which the prognosis is poor. The potential application of lung reimplantation for intractable asthma is intriguing.

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# EXPERIENCES WITH RENAL TRANSPLANTATION AT THE UNIVERSITY OF MINNESOTA HOSPITALS

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# Heart Replacement

## The Cardiac Chimera vs. Mechanical Man

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It is interesting to speculate concerning this compelling matter of heart replacement. As with heart valves, the choice would appear to lie between some mechanical apparatus and tissue transplantation.

Without question several kinds of caged ball or disk prostheses have gained far wider application than heart valve homografts, although the final judgment is still to be made. Whether mechanical heart substitutes will find an equally impressive application remains to be demonstrated even in the laboratory.

Some form of scientific breakthrough is probably essential to the development of any manmade device capable of supporting the circulatory burden fully and indefinitely. While clotting seems currently to provide the greatest obstacle to successful use of the artificial heart in the laboratory, the truly limiting problems are identifiable though perhaps camouflaged by premature loss of the animal through thromboses and emboli. Control and balance of and between the greater and lesser circulations constitutes one stumbling block of immense proportions. An inexhaustible power source which can be implanted and perhaps recharged through the intact skin must also precede the final form of an acceptable heart replacement. Along the way temporary devices for supplementing either side of the heart will no doubt attract some clinical following, but total heart substitution represents the ultimate goal and the golden moment of achievement for biomechanical science.

Assuming that legal and moral objections to a heartless existence can be resolved, and this assumption is made willy-nilly for the sake of argument, the social and mental status of mechanical man is uncertain at best and raises some interesting questions at least. It may in fact be that the homotransplanted heart is preferable to no heart at all, the plight of mechanical man. If one prosthetic heart valve occasionally develops levels of noise intolerable to the individual, the sound generated by enough energy to drive the circulation may render our patient socially conspicuous and prevent his making a useful adjustment. While the patient may become accustomed to his lot, well aware of the alternative, the ever changing spectrum of interpersonal relationships allows insufficient time for his friends to accommodate. An artificial heart may not permit its beneficiary the kind of anonymity enjoyed by the individual with a mere pacemaker for example.

It appears there are special problems associated with the mechanical heart just as with its tissue counterpart.[1] We are beginning to see a few trees around the fringe of what could be a sizable forest. Quite apart from such unique problems as the social identity of an individual whose heart is a machine one must consider the present status of cardiac replacement. In contrast to the few hours of adequate circulatory support thus far achieved by the best artificial heart substitute, long-term survival of homotransplants has been reported by Lower.[2] Let us review the laboratory experience at Stanford with homotransplantation of the heart and see what avenues lie ahead.

### METHODS AND RESULTS

The surgical method is well described and involves the simple maneuver of leaving portions of either atria and atrial septum in the host.[3] With extracorporeal circulation and peripheral venous cannulation, the heart is removed, and

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the donor heart, prepared in the same manner, is implanted by suturing the right atrium, the atrial septum, the left atrium, the aorta, and the pulmonary artery in that sequence. The usual form of preservation during the obligatory period of donor cardiac anoxia is refrigeration in 4° C. isotonic salt solution. This alone has permitted successful homotransplantation of the canine heart up to seven hours without coronary perfusion.[4] Hyperbaric oxygenation is under investigation, but to date intercorporeal survival of the heart transplant has not been extended by adding this modality.

At the outset we were hopeful that the heart might be impervious to the immune response since it is a far less complex tissue than either skin or kidney and perhaps therefore less antigenic. Also, the heart is a large dose of antigen and conceivably might force an antigen-antibody stalemate. Finally, teleologically, perhaps the animal would be reluctant to shed such a vital foreign tissue! Predictably, the immune response was observed with approximately the same mean survival period as that demonstrated for skin and renal tissue. After a control series of experiments established the range of host survival between four and twenty-one days with a mean of seven days, immune suppressing chemicals were administered to attenuate homograft rejection. It was possible to extend mean survival from seven to seventeen days through the use of azathioprine (Imuran®) and steroids administered daily, but the ratio of so-called drug deaths increased prohibitively. Some dogs continued to reject their grafts despite prodigious amounts of immune suppressants. It became clear that some as yet undeveloped program of chemotherapy would be necessary before long-term survival of the heart homograft were attained.

Lower found a possible coincidence between decrements in the R-wave voltage of the electrocardiogram and peaks of graft rejection.[4] Assuming that a diminution in R-wave amplitude heralded important graft infiltration by immunocytes, he administered chemotherapy only when voltage levels dropped abruptly. A program of so-called intermittent drug administration was formulated, and long-term survival was achieved. In fact, of 6 dogs so treated 5 lived at least one month, 3 survived at least three months, and 1 animal died of infection with only microscopic evidence of rejection one year following orthotopic transplantation of the heart. This last animal received no immune suppressing chemicals during the last six months of life, not because of some mysterious balance between host and graft but because the dog was an immunological cripple. Autopsy showed the heart to be grossly normal with only a few clusters of immune cells in microscopic sections.

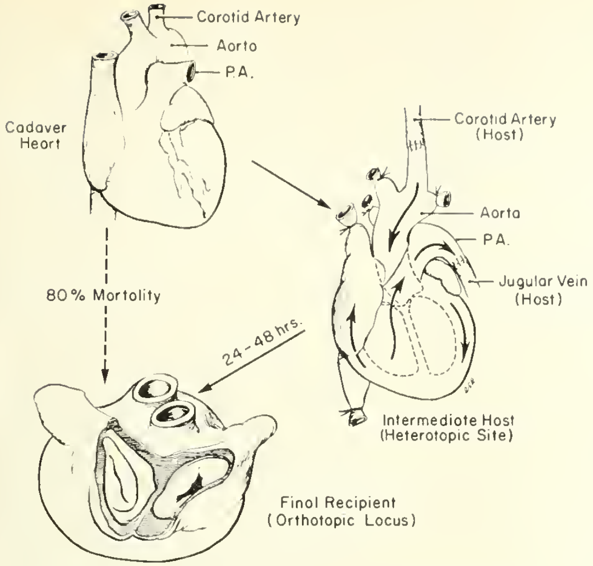
### CURRENT TRENDS IN ORTHOTOPIC HOMOTRANSPLANTATION OF THE HEART

Dong has described cardiac reinnervation following autotransplantation where the procedure is an exact replica of the homograft save for absence of the rejection process.[5] Unfortunately, the longest homograft survivor did not show reconstitution of central nervous system control. In autografts eighteen months appears to be the magic duration of survival before reinnervation can be documented. It is clear that one could anticipate return of full nervous regulation after cardiac transplantation if the immune response were neutralized for a year and a half. Interestingly, physiological responses of the denervated heart are compatible with normal activity, and hormonal control continues from direct myocardial effects. Control and balance of the transplanted heart, even with denervation which can be considered transient, is far superior to any computerized program for the heart of mechanical man.

The immune reaction under constant bombardment both clinically and experimentally in renal transplants must be less of a challenge to the cardiac homograft than the unspectacular issue of supply and demand and selection of recipients and donors. Who will be a mechanical man is a question of the same order of magnitude as who will be a cardiac chimera. There is little advantage to either chimera or the mechanical heart with respect to case selection. Resuscitation and storage of the cadaver heart comprise the greatest obstacle to acceptance of clinical heart transplants. Control and power loom as the major deterrents to successful use of a mechanical heart for total replacement.

In the cardiovascular surgical laboratory at Stanford currently under examination is the concept of an intermediate host for resuscitation and temporary storage of the cadaver heart. Introduction of a third party for heterotopic placement of a heart graft during its retrieval from the effects of prolonged anoxia would permit orthotopic transplantation of a beating "cadaver" heart. Failure of the so-called, and arbitrarily designated, cadaver heart to cope with the circulatory burden suggested that some form of biological perfusion might revitalize the heart to the extent that orthotopic placement would be feasible. The figure represents this experimental protocol.

Several methods of isolated heart perfusion



Resuscitative storage of the heart transplant utilizing an intermediate host

have been used with generally poor results. Even when the cadaver heart is removed en bloc with the lungs, dependent edema and interstitial hemorrhages are common, although usually a vigorous heart beat can be attained. Mechanical oxygenators are still less satisfactory. Immediate orthotopic transplantation of the cadaver heart results in a high mortality, but failure of the cadaver heart in a heterotopic site represents little additional loss. Clearly, the restored graft must be transplanted before it is attacked significantly by immunocytes from the intermediate host. Probably twenty-four to forty-eight hours would be the maximum safe period for resuscitative storage of the cadaver heart graft. To date it can be stated only that placement of cadaver grafts in the necks of intermediate animals provides vigorously beating, apparently revitalized hearts for orthotopic grafting twenty-four hours later. The next step is replacement of the host heart with a stored, beating heart whose asystole earlier qualified the donor as a cadaver.

Heterografts appear less likely than either homotransplants or mechanical hearts. Unless some new and plentiful subhuman species can be developed, heterografts will not be available in sufficient quantity. Too many homografts are potentially available if their cadaver status can be reversed to consider seriously the heterologous graft. Also, the intense immune response to heterologous tissue would require a scientific breakthrough in chemotherapy, perhaps equal to successful drug therapy for cancer.

## SUMMARY

Obstacles to homotransplantation of the heart and replacement of the diseased heart with a mechanical device appear to be of approximately equal magnitude. Whereas control of and balance between the systemic and pulmonary circulations and an indefatigable power source limit the mechanical device, resuscitation and storage of the cadaver heart and the immune reaction threaten acceptance of tissue grafts. The principle of resuscitative storage in the form of an intermediate host may solve the problem of heart homograft banking. A universal donor species is unlikely.

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Supported in part by USPHS grant HE-08696

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# Clarence I. Lillehei, D.D.S.

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When several members of a family ascend to high plateaus in their various vocations there is frequent inquiry concerning the reason. Such a family is that of Clarence I. Lillehei with each of the 5 members attaining high goals. C. I. Lillehei was born in Sioux City, Iowa, on Dec. 10, 1892. When he was about 1 year old, his parents moved to Luverne, Minn., where his father was a stone mason. His father developed tuberculosis and after about two or three years in this condition he contracted typhoid fever which caused his death.

When Clarence was 5, the mother with 1 other child, Elmer, was almost destitute and was compelled to do housework in the various homes of Luverne in order to maintain her own home. Despite her financial handicap, she never allowed any thought to enter the boys' minds but that they would go to school like other children. Although Clarence was very young, he began doing little chores for neighbors which provided a small income to contribute to the upkeep of the home. As he grew older, he procured every kind of work that was available for a schoolboy. His summers were spent mostly on farms where he engaged in practically every type of work. When his brother, Elmer, attained working age, he also did similar jobs in the community. Thus, the home was maintained. Their mother made it a point always to be at home when the boys returned from school in the afternoon and to remain at home until they left for school in the morning.

Thus, the family was self-supporting and the boys went through school on the same schedule as other children whose families had no severe financial handicap. Throughout those years, the mother maintained the discipline of the home knowing at all times where her sons were and, as an ideal parent, she guided them through the public school years.

Elmer decided to become a physician. He was awarded the degree of doctor of medicine by the University of Minnesota in 1924. He engaged in the practice of general medicine in Robbinsdale, Minn., until his death from coronary thrombosis on May 14, 1960.

During those early years, the boys had an uncle with a large dentistry practice in Minneapolis. His example inspired Clarence to become a dentist. After graduating from high school at Luverne, Clarence came to Minneapolis, found work, and decided to spend two years in college at the University of Minnesota before applying for admission to dental school. In the fall of 1914, he entered dentistry, still earning every step of the way by work outside of school hours. When he graduated in 1917, he enlisted in the army and was in military service until July 1919. He then became associated with his uncle. The uncle thought that his nephew would take over the office at the time of his retirement. However, Dr. Lillehei purchased the dental practice of Dr. Carr who was ill and established his own practice in the Syndicate Building.

Henry Boos, who operated a large dental laboratory, was generally known as a fine friend and counselor of young dentists. In due time he advised Dr. Lillehei to procure an office in the

Dr. and Mrs. Clarence I. Lillehei

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Dr. Richard Lillehei

Dr. C. Walton Lillehei

Dr. James P. Lillehei

Physicians and Surgeons Building and establish his own private practice of general dentistry. He followed Mr. Boos' advice and has remained in the same office for the past forty-four years. Throughout those years, Dr. Lillehei has experienced no accident, no serious infection, or any other important problem among his patients.

In addition to an extensive, excellent private practice, Dr. Lillehei has played an important role in the promotion and welfare of his profession. In the Minneapolis District Dental Society, he has served on the following: executive council, legislative committee, membership committee, midwinter clinic committee, constitution and by-laws committee, study course committee, and chairman of the membership committee. He was chosen as Who's Who in Minneapolis Dentistry by the membership of the District Dental Society in 1963.

On Sept. 15, 1917, Miss Elizabeth Walton and Dr. Lillehei were married. Their first son, C. Walton, was born Oct. 23, 1918. He attended Minneapolis public schools and graduated from West High School in 1935.

James P. was born on May 5, 1925, and in due time he entered Southwest High School where he graduated in 1942.

Richard C. was born on Dec. 10, 1927, and graduated from West High School in 1945.

### THE THREE SONS AFTER HIGH SCHOOL

After graduating from high school, C. Walton entered the University of Minnesota and received the degree of bachelor of science with distinction in 1939, bachelor of medicine in 1941, and doctor of medicine in 1942. From 1941 to 1942 he was an intern at the Hennepin County General Hospital.

He entered military service on June 29, 1942, and became commanding officer of the United States Army Medical Clearing Company, and commanding officer of the 33rd Field Hospital, England, North Africa, and Italian theaters. He received the Bronze Star Medal, United States Army, 1944. He was discharged on Feb. 12, 1946.

In 1959 he received the Orden del Merito Sanitario "Jose Fernandez Madrid," Ministerio de Guerra, Republic de Columbia.

From January 1946 to September 1947 he was a fellow in the department of surgery, University of Minnesota, and was national cancer trainee in the department of surgery from 1947 to 1950. He was research assistant to Dr. Wangensteen in the experimental laboratory of surgery from October 1946 to December 1947 and research assistant to Dr. Maurice Visscher in the department of physiology from October 1948 to September 1949. He was senior surgical resident from October 1949 to April 1950. In 1951 he was awarded the degree of master of science in physiology and doctor of philosophy in surgery by the University of Minnesota Graduate School.

He became clinical instructor in the department of surgery in July 1949 and was promoted to associate professorship in July 1951 and to full professorship in June 1956.

Dr. Lillehei's success is due in part to his great devotion of time to his work. He has never worked by the clock. Practically all of his lifesaving and life prolongation surgical procedures were learned and proved successful on laboratory dogs before they were administered to people. Examples are his cross circulation employed while the first human ventricular septal defect was successfully repaired. Cross circulation was employed on 45 children whose heart conditions limited their activities and would markedly shorten their lives. More than 30 of them were restored to normal heart function.

While cross circulation and 1 or 2 other methods were useful, they were cumbersome and did not allow enough time for all open heart procedures. In 1955 he and Dr. Richard A. DeWall produced the bubble oxygenation heart-lung machine which simplified the problem of the patient's circulating blood bypassing the heart—thus lengthening the time so more prolonged operations could be performed.

His pioneer work was so sound that he began receiving awards in 1951 when the American Association for the Advancement of Science presented him with the Theobald Smith Award. The second was by the American College of Chest Physicians in 1952 when he won the first prize in a worldwide essay contest. His essay was entitled "Experimental Bacteriological Endocarditis in Proliferative Glomerulonephritis." He has continued to receive numerous citations including a Lasker Award in 1955 and the Hektoen Gold Medal, American Medical Association Scientific Exhibit, June 1957. The same year he was designated Minnesota Man of the Year and received the MODERN MEDICINE Distinguished Achievement Award. The next year he received the award and honorary certificate of membership in the International Medical Club of Washington, D.C. The Susan and Theodore Cummings Humanitarian Award from the American College of Cardiologists for "inspired teaching of cardiology" and the Gairdner Foundation International Award were granted in 1963.

Mrs. Joseph Gales Ramsey, who has brought 70 children and adults from other parts of the world, particularly Greece, to Dr. Lillehei for cardiac surgery, awarded him with $170,000 to be used in any way he desires in the promotion of his work.

Dr. Lillehei is a fellow of the American College of Surgeons, American College of Cardiology, American College of Chest Physicians, and American Heart Association. He is a diplomate of the American Board of Surgery and the American Board of Thoracic Surgery. He holds membership in 18 medical and scientific societies and associations, including the International Cardiovascular Society, University Surgeons, American Surgical Association, and Society for Vascular Surgery, in addition to 6 honor societies in other countries.

He has been called upon to present more than a dozen special lectures in various parts of this country and in others including Sweden, England, and Oriental nations.

Alone or in collaboration he has published 250 excellent articles. He is associate editor of *Excerpta Medica* and *Angiology.*

He holds or has held numerous special offices including the vice-presidency of the American College of Cardiology and governor of that college; general medical research program, project committee, United States Public Health Service; and committee on cardiovascular surgery, American College of Chest Physicians.

Dr. Lillehei's name has become household around the world because of his pioneer work in open heart surgery. In addition to his large volume of routine cardiovascular surgery he devotes much time to the research laboratory with special interest in and work on myocardial revascularization.

Immediately after completing high school, James P. Lillehei registered at the University of Minnesota where he received the degree of bachelor of science in 1946 and bachelor of medicine in 1947. He became a graduate student and teaching assistant in the department of physiology following which he received the degree of doctor of medicine in 1948. After completing internship at Hennepin County General Hospital, he became a resident in internal medicine at St. Barnabas Hospital and the Minneapolis Veterans Administration Hospital until 1952. For the next two years he was with the United States Air Force as a flight surgeon and staff member of the school of aviation medicine at Randolph Air Force Base in Texas. The University of Minnesota awarded him the degree of master of science in physiology in 1954. For the next four years Dr. Lillehei was an instructor in the department of internal medicine, University of Texas, Southwestern Medical School, during which time he was certified as a diplomate of the American Board of Internal Medicine.

In 1958 he returned to Minneapolis where he was staff physician in the pulmonary disease service of the Veterans Administration Hospital. When the university medical faculty was organized in 1888, Dr. J. W. Bell initiated the interest in diseases of the chest, particularly tuberculosis. Those who succeeded him included George D. Head and Henry L. Ulrich who organized the first clinic for tuberculosis in the medical school.

In the early 1920s a proposal was made for the creation of a division of tuberculosis and chest diseases in the department of medicine similar to that in dermatology and nervous and mental diseases. The chief of the department of medicine recommended to the administrative board that such a division be established and it was passed unanimously and recommended to the board of regents. However, this proposal apparently was in advance of its time. Therefore, teaching and research in tuberculosis and pulmonary diseases were continued as previously in the chest disease clinic. Although a large volume of work was done and much was accomplished, ideal circumstances were not obtained.

To those physicians working in diseases of the chest, it is a unique pleasure to know that after such a long time lag a situation that promised to be ideal is now in operation. The National Tuberculosis Association, the Minnesota Tuberculosis and Health Associations, and the St. Louis, Ramsey, and Hennepin County Tuberculosis associations united to provide $20,000 annually for five years as the salary for a full-time physician in the department of internal medicine to direct chest disease work including teaching, research, and all duties pertaining to that field.

Obviously, the selection of a director was the most important item of the entire project. The ideal physician for this position, Dr. James P. Lillehei, had been working in this field as though years ago he had set out to qualify himself for the position he now holds, namely, associate professor of internal medicine in charge of diseases of the chest. During the first three and one-half years in this position, he was especially concerned with establishment of patient care and teaching in the area of chest diseases. During that time a pulmonary laboratory was planned, equipped, and put into operation at the University of Minnesota Variety Club Heart Hospital. A three-month rotation in pulmonary diseases for internal medicine residents was established and a one- to two-year training program for training teachers of pulmonary disease was also begun during those years.

His research work has been of the highest quality and he has published excellent articles. Therefore, he is well qualified to direct research. With the pulmonary laboratory consultation services and teaching programs in operation he is now initiating a number of research projects in pulmonary disease. Those who have known Dr. Lillehei as an intern, teaching assistant, resident, instructor, and staff physician have unanimously testified to his superiority in the field of diseases of the chest. Thus, for the first time in its nearly eighty years of existence, the school of medicine has a full-time, highly qualified professor in charge of teaching and research in this field. Although a terrible time lag obtained, the present setup, and particularly the direction of Dr. Lillehei, were well worth the wait.

Richard graduated from West High School in Minneapolis in June 1945. In 1948 he was awarded the degree of bachelor of arts, Magna Cum Laude, University of Minnesota. The next year he received the degree of bachelor of science and in 1951 he was at the head of his class when the degree of bachelor of medicine was awarded. The University of Minnesota granted him the degree of bachelor of medicine after his completion of a rotating internship at the Hennepin County General Hospital. From 1952 to 1954 he was a medical fellow in the department of surgery, University of Minnesota. He became a postdoctoral research fellow in arthritis and metabolic diseases for the United States Public Health Service in July 1954 to October 1954 and from November 1956 to 1960. This fellowship was interrupted from October 1954 to October 1956 by military service with the Walter Reed Army Institute of Research at the Walter Reed Army Medical Center, Washington, D.C.

In 1958 to 1959 he was senior resident in surgery and from 1959 to 1960 senior resident in cardiovascular surgery, University of Minnesota Hospitals. The University of Minnesota awarded him the degree of doctor of philosophy in surgery in 1960. In 1960 he was appointed assistant professor of surgery; two years later he was promoted to an associate professorship and to professor of surgery in 1966, University of Minnesota.

While in school he won membership in honorary fraternities including Phi Beta Kappa, Iron Wedge, Alpha Omega Alpha, and Grey Friars. During his senior year, he received the Southern Minnesota Medical Association medal and prize for excellence in medicine and surgery for having maintained the highest four-year average in the school of medicine.

Special honors continued to be showered upon him after graduation in medicine. In 1960 he became the John and Mary R. Markle Scholar in Medical Science. In 1962 the Minneapolis Junior Chamber and the Minnesota Junior Chamber of Commerce voted him their distinguished service awards as the outstanding young man in Minneapolis and of Minnesota. In 1964 he was awarded the Hektoen Gold Medal for an exhibit on the treatment of irreversible shock by the American Medical Association.

He holds membership in all of the usual local, state, and national medical organizations as well as the Society of Alimentary Tract Surgeons, American Society for Artificial Internal Organs, American College of Chest Physicians, American Association for Thoracic Surgery, American College of Cardiology, the American College of Surgeons, and many others. He is certified by the American Board of Surgery and the Board of Thoracic Surgery.

Dr. Lillehei has been invited to present many special lectures including the following:

Adolph Sachs Memorial Lecture, Creighton University School of Medicine, Omaha, Nebraska, 1961.

Sustaining Lecturer, Society of Military Surgeons, Washington, D.C., 1962.

American Cancer Society Science Writers' Seminar, LaJolla, Calif., 1963.

Alpha Omega Alpha Lecture, University of Manitoba, Winnipeg, 1964.

Alpha Omega Alpha Lecture, University of Missouri, Columbia, Missouri, 1964.

Charles C. Sweet Memorial Lecture, Phelps Memorial Hospital, North Tarrytown, New York, 1965.

Baxter Travenol Lecture, Annual Congress, Int. Anesthesia Research Society, Bal Harbour, Florida, 1966.

Alone or with medical collaborators he has published 134 papers and has 8 in press in medical and surgical journals.

Dr. Lillehei's main research interests are shock, coronary revascularization, and organ transplantation.

### THE TWO MOTHERS

No higher plateau has been reached by the Doctors Lillhei than that of the 2 mothers. Mrs. Paluda Lillehei's husband died, as has been stated, in 1895 when Clarence was 5 and Elmer was 3 years old. Mr. Lillehei had been ill for a long time so the family was almost destitute. This mother worked and lived for her boys. She explained new situations as they arose in such a way as to win their complete confidence. Hence, they carefully followed her guidance through childhood and the teen-age period and on to adulthood as fine American citizens devoting their lives to the benefit of humanity.

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# Book Reviews . . .

## Amines and Schizophrenia

*edited by* HAROLD E. HIMWICH, SEYMOUR S. KETY *and* JOHN R. SMYTHIES, *290 pp., ill., Pergamon Press, New York, 1967. $11.50*

The presence in the brain of amines such as norepinephrine, dopamine, serotonin, and the psychotometric properties of other amines, for example, bufotenin, psilocin, N,N-dimethyltryptamine, and mescaline, lend credence to the hypothesis that the derangement of amino acid metabolism is implicated in a variety of mental disorders.

This book, a report of a symposium on the subject, is concerned specifically with the relationship of amines to schizophrenia. The role of genetically determined metabolic disorders is not overlooked as these toxic substances are produced by inborn errors of metabolism as well as by changes in metabolic pathways arising from nongenetic causes.

The following papers were presented at this symposium: Structure-activity relationships of mescaline by J. R. Smythies; New developments in the investigation of 3, 4-dimethoxyphenylethylamine to schizophrenia by A. J. Friedhoff and E. van Winkle; Para-O-methylation of dopamine in schizophrenic and normal individuals by F. A. Kuehl, Jr.; Studies of amines in normal and schizophrenic subjects by T. L. Perry, S. Hansen, L. MacDougall, and C. J. Schwarz; 3, 4-dimethoxyphenylethylamine in schizophrenia? by R. E. Bourdillon and A. P. Ridges; Studies on the association of urinary tryptamine with the excretion of amino acids and 17-ketosteroid hormones in schizophrenic patients by H. H. Berlet, J. K. Spaide, K. Matsumoto, and H. E. Himwich; Tryptophan metabolism in psychoses by G. G. Brune; Metabolic interrelationships of tryptophan and methionine in relation to mental illness by H. Sprince; Studies on periodic catatonia by F. A. Jenner; Comparative neurophysiological studies of psychotomimetic N-dimethylamines and their nonpsychotomimetic congeners devoid of the N-methyl or N-diethyl configurations by H. E. Himwich; Gas chromatographic analysis of some psychoactive indole bases by B. Holmstedt; Tryptophan metabolism in mental illness by D. Richter; Hallucinogenic amines and schizophrenia by S. Szara; Factors influencing S-adenosylmethionine levels in mammalian tissues by R. J. Baldessarini; the actions of various biological amines on single neurones in the limbic system by D. W. Straughan; A quantum-chemical correlate of hallucinogenesis by S. N. Snyder and C. R. Merril; and Studies on homocystinuria by S. H. Mudd, L. Laster, J. D. Finkelstein, and F. Irreverre. An introduction by Dr. J. R. Smythies and a summary by Dr. Seymour S. Kety complete the presentation. This broad spectrum, covering clinical, biochemical, physiological, and analytical aspects gives an up-to-date picture of the present knowledge and progress in this subject.

An outstanding feature of this book is a comprehensive and detailed report of the discussion following each of the 4 groups of papers. As is common at symposia of this type, the discussion of the papers have as much if not more interest than the papers themselves but it is seldom given so completely as here.

An adequate bibliography following each paper (and much of the discussion) and an excellent index makes this a most useful volume. Its appeal will be limited to physicians and biochemists with a particular interest in mental disorders but for them it will be most satisfactory.

DAVID B. SABINE
*Yonkers, New York*

## Roentgenologic Diagnosis: A Complement in Radiology to the Beeson and McDermott Textbook of Medicine, Volumes I and II

*by* J. GEORGE TEPLICK, M.D., MARVIN E. HASKIN, M.D., *and* ARND P. SCHIMERT, M.D., *vol. I, 514 pp., vol. II, 515-1198 pp., ill., W. B. Saunders Co., Philadelphia, 1967. $38 the set*

The authors, in their preface, say, "This pictorial presentation of roentgenograms has been prepared primarily for practicing physicians and for residents in internal medicine and radiology as a guide to diagnostic interpretation. Its 2,000 illustrations represent a collection from world-wide sources and include many unique film studies."

As an atlas of radiographs, insofar as radiographs can be reproduced on paper, it is superb. The text gives the salient diagnostic criteria and an abstracted description of the condition in a concise and easy to read form and, in almost every case, on the same page as the radiograph. Bibliographies are attached to each chapter and cover important references.

The unique feature of the volumes is that they are tied into the text and index of the *Beeson-McDermott Textbook of Medicine,* and for a detailed description of the disease pictured, one refers to the text or from the texts to the atlas.

Perhaps this is insidious salesmanship on the part of Saunders to sell radiologists the textbook, which is the descendant of Cecil and before that Osler, and internists, the Tepler, Haskin, Schimert volumes.

CYRUS O. HANSEN, M.D.
*Minneapolis*

## The Coming Revolution in Medicine

*by* DAVID D. RUTSTEIN, M.D., *180 pp., The M.I.T. Press, Cambridge, Mass., 1967. $4.95*

This book represents the synthesis of 4 lectures given by Dr. Rutstein at the Massachusetts Institute of Technology. With a professorial approach, he attempts to demonstrate "the paradox of modern medicine" that is, "the enormous expansion in our national medical research program together with our lagging national health picture." From his position as head of the department of preven-

(Continued on page 13A)

vol. 3, no. 2

# DORSEY Season

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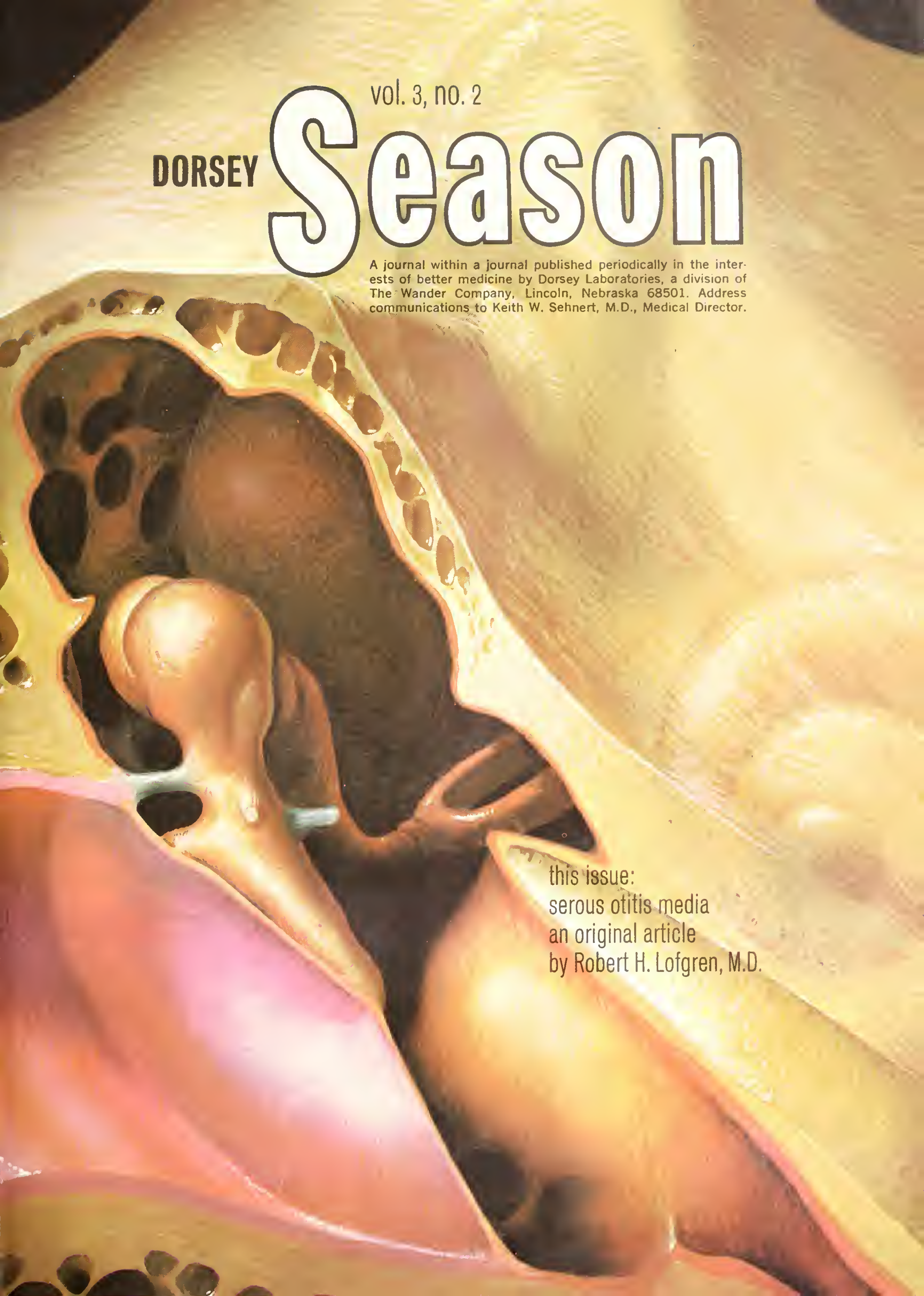
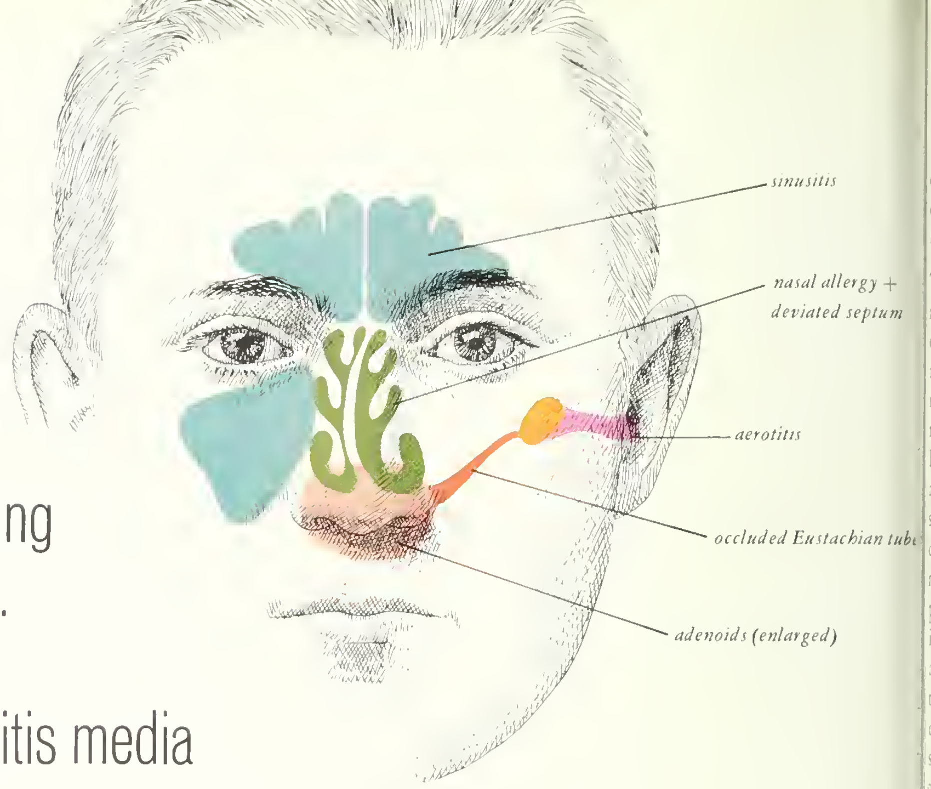


this issue:
serous otitis media
an original article
by Robert H. Lofgren, M.D.



# the complaining earache... key to serous otitis media

Robert H. Lofgren, M.D.
Associate Surgeon, Massachusetts Eye and Ear Infirmary, Boston, Massachusetts

Serous otitis media is probably the most common ear problem in children, especially in the wintertime. Diagnosis is usually easy in adults, but may be quite difficult in children, especially the very young child where one has to depend almost entirely on the physical findings.

The symptoms of serous otitis are a fullness in the ear, a mild hearing loss and mild earache. The earache can best be described as a "complaining earache" instead of a "screaming earache" as found in purulent otitis media. A young child may be irritable and pull at the ear. In milder cases, and as the ear recovers, gurgling and popping noises can be heard in the ear.

On examination one may see a yellow tympanic membrane and if a fluid level is present the diagnosis becomes easy. However, the eardrum may be dull gray, or slightly pink, or even perfectly normal. Pneumomassage using a Siegle otoscope or a closed-head electric otoscope must be done on both ears, otherwise the diagnosis will be frequently missed. Attempted movement of the drum with the pneumatic otoscope produces either a sluggish motion of the drum or no motion at all instead of the easily movable normal drum. The Rinne test is negative and there is a 15-20 decibel conductive hearing loss. The bone conduction may be better than normal and an air-bone gap may exist even with the air conduction within normal limits. Occasionally one finds a false nerve deafness on the audiogram when thick glue-like fluid causes immobility of both the oval and round window. Both conditions return to normal when the fluid is removed, but they make the interpretation of screening audiograms very difficult.

There is no single cause for serous otitis. One factor always present is blockage of the eustachian tube, but this alone is not enough to produce fluid. There must also be an inflammatory reaction. Blockage of the eustachian tube may be caused by many conditions. In children the most common cause is enlarged adenoids. In the summer the next most common cause is allergy. Upper respiratory infections or influenza are common causes in the winter. Nasal allergy, acute and chronic sinusitis, nasal septal deformity and cleft palate can all cause eustachian tube obstruction. Some children may have a congenitally small eustachian tube, but fortunately they usually "grow out of the problem."

The first sign of a nasopharyngeal tumor is often a serous otitis. One must always rule this out in any adult who later in life develops repeated or persisting serous otitis. Causes sometimes overlooked are nasogastric tubes after surgery, simple obesity and cardiorenal disease, which may produce congestion in the mucosal lining of the eustachian tube. In recent years we have been seeing a new cause—acute otitis media, where the patient is adequately treated with antibiotics but where drainage has not been established either through the eardrum or down the eustachian tube. A sterile exudate is left in the middle ear.

The inflammatory response may be caused by a marked negative pressure as in air otitis from flying, or it may be from a mild bacterial or viral infection in the middle ear. Serous fluid is a good culture medium and will frequently go on to purulent otitis media, especially if the original blockage was caused by an infectious process such as acute rhinitis or adenoiditis. When the infection heals there may be scarring in the middle ear mucosa. Mucous glands develop in this tissue and pour out a thick mucoid material. This ear usually looks normal until a pneumatic otoscope is used. The objectives in treating serous otitis are to remove the obstructing agent and to provide drainage from the middle ear. Often this can be accomplished by decongestants and nose drops. If large obstructing adenoids are present they should be removed. Sinusitis should be treated with oral decongestants or nose drops, plus antibiotics where indicated. Nasopharyngeal tumors should be treated. Allergies should be treated with antihistamines and, where indicated, by desensitization.

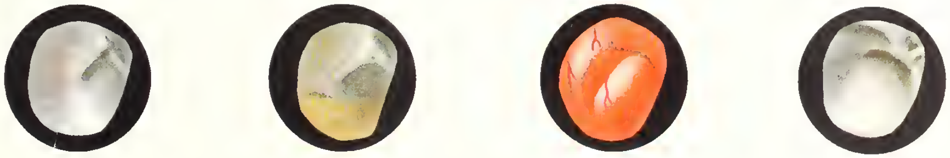
If the fluid does not clear with medical treatment within a week or two, a myringotomy should be done. If there is a question of active infection or if the fluid looks purulent, as is seen at the conclusion of acute otitis, cultures are taken. On adults this can be done in the office without anesthesia. It is no more painful than an intravenous needle for a blood test. A good safe topical anesthetic has a tremendous psychological value to the patient. Children under the age of 1 require no anesthesia. Between the ages of 1 and 3 anesthesia is not absolutely essential although a general anesthetic may be used to avoid the child's possible mistrust at follow-up examinations. I usually do the myringotomy at the same time as the adenoidectomy if the adenoids are enlarged. Once drainage has been established with decongestants or by myringotomy, positive pressure inflation of the middle ear is invaluable in forcing out the serous fluid and keeping it from reforming. The patient can do this himself by performing the Valsalva maneuver. This should be done several times a day, by taking a deep breath, holding the nose and blowing hard against the closed lips for a second or two.

In resistant cases where the fluid reforms as soon as the myringotomy heals, small polyethylene tubes are inserted through the myringotomy site. Insertion of the tubes, even in adults, usually requires an anesthetic. Good anesthesia can be obtained by infiltrating the canal wall with a local anesthetic, using a #27 needle. Once inserted the patient has no sensation of the tubes' presence. Be careful to caution the patient or parents not to allow any water to get into the ear canal while a myringotomy is open or a tube is in place. Water can be kept out by a pledget of lamb's wool in the ear canal or a cotton pledget thickly coated on the outside with petroleum jelly. I check these patients a week after a myringotomy to be sure it is healed and at two month intervals until the tubes have fallen out, usually within three to six months after insertion.

The mucoid type of fluid is so thick and tenacious that it is appropriately called a glue ear. It is aspirated only with difficulty through the eardrum, and occasionally must be removed through a tympanotomy. This thick, glue-like fluid is prone to recur, as the myringotomy usually heals long before the mucous membrane has returned to normal. Repeated myringotomies, as many as ten or twenty, were formerly required for this condition. Now polyethylene tubes are inserted initially when this thick, glue-like material is found. At times a subacute mastoiditis may accompany the serous otitis, which will necessitate a simple mastoidectomy before the condition can be eradicated. Usually the thin serous fluid readily responds to decongestants or to a myringotomy and removal of the eustachian tube obstruction. Occasionally, however, even serous fluid will repeatedly reform. For this, resection of the tympanic plexus of nerves which lies on the promontory of the middle ear has been carried out, as the tympanic branch of the glossopharyngeal nerve is the secretomotor nerve to the ear.

Failure to diagnose serous otitis is the most common cause of the recurrent, almost continuous otitis me-

*Otoscopic Views*



*Normal* *Acute Serous* *Acute Purulent* *Chronic Serous* dia seen in young children. In these cases a myringotomy will frequently provide a long-term cure without adenoidectomy or any other surgery. Failure to do this may allow the condition to go on to acute or subacute mastoiditis. Adhesive otitis media with scar tissue binding down the ossicles or tympanosclerosis may also result with permanent impairment of hearing. The prognosis for hearing with adhesive otitis or tympanosclerosis is usually poor. If the adhesions are removed, they reform, and the same is frequently true of tympanosclerosis even after a tympanoplasty. For many of these people a hearing aid is the only solution. The constant negative pressure in long standing serous otitis media may draw in either Schrapnell's membrane or the posterior superior portion of the eardrum forming a pocket to cause a chronic otitis media with cholesteatoma, which may not become apparent until twenty or thirty years later.

The non-medical complications of improper diagnosis or treatment may be even more serious. The irritable child, the frequent bouts of acute purulent otitis media with pain and fever, the expense of antibiotics and doctors, and the time lost from school or work affect the entire family.

In summary, serous otitis has many causes. There is a blocking of the eustachian tube and an inflammatory reaction in the middle ear mucosa, the latter usually caused by a mild infection. The treatment is to provide immediate drainage by decongestants and where necessary, by a myringotomy. The obstructing agent must be removed by surgery if it is adenoid or by oral decongestants, and antihistamines or nasal spray if it is an upper respiratory infection or allergy. Occasionally resistant cases require plastic tubes placed through the eardrum or other more radical surgery. Failure to treat properly leads to hearing loss which may be permanent, repeated acute otitis media or possibly even chronic otitis media with cholesteatoma.

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*(Advertisement)*

(Continued from page 8A)

tive medicine at Harvard, he is well qualified to present this paradox and does it lucidly. He proceeds to give his reasons why this paradox exists, pointing out "our unplanned medical care system is comprised of conflicting and duplicating activities on the one hand and gaps in service on the other." He most interestingly compares the obstetrical care in Sweden with that of the United States and points out that the Swedish system, using midwives as ancillary medical personnel, have a neonatal mortality rate considerably lower than our own.

Dr. Rutstein feels the answer to all this lies in an analysis of our problem and a planned program utilizing the technique of "Operation Research." He visualizes an increasing utilization of paramedical personnel and ancillary medical services and a centering of medical services about the hospital.

These conclusions are very similar to those arrived at by a series of conferences on medical care called by Secretary Gardner of the Department of Health, Education, and Welfare culminating in one on The Group Practice of Medicine held in Chicago in October 1967.

To anyone unfamiliar with the tremendous amount of thought and planning that has gone on in this effort to find the answer to our country's future medical needs, *The Coming Revolution in Medicine* makes good reading. As one who has been involved in some of this planning, I find 2 criticisms. One is that the university-oriented doctor is primarily interested in disease, or as Dr. Rutstein puts it, "In the final analysis, the effectiveness of a health program must be measured by a decrease in disease, disability, or untimely death." Is there no room in the future for the doctor who is primarily interested in the patient as a human being? What may be the answer for the malfunctioning human machine may not necessarily be the right answer for the human being. Illustrations of this are numerous in most teaching hospitals. Dr. Rutstein alludes to the need for such a physician but does so somewhat superficially.

Secondly, supposing we can, by "Operation Research" or some other means come up with an ideal answer to our country's medical needs, how then do we implement the new plan? Short of total conscription, how do you move doctors out of their current positions, current attitudes, and current ways of doing things?

These are probably unanswerable questions. In spite of the individual physicians' unwillingness to change, anyone who thinks the practice of medicine is not going to change—and change even more rapidly and radically than it has—is living in a false illusory world of his own making. How to provide direction and control for these changes is the crux of the problem. Dr. Rutstein attempts to provide some answers.

H. P. VAN CLEVE, M.D.
*Austin, Minn.*

## Modern Trends in Rheumatology

*edited by* ALAN G. S. HILL, M.C., *394 pp., ill., Appleton-Century-Crofts, New York, 1967. $15.95*

The physician who wishes to update his knowledge of the major rheumatic diseases, but who is frightened by the size and cost (1355 pages at $32.50) of Hollander's "Arthritis," could hardly do better than acquire this excellent volume. Most of the chapter authors are British, but there are notable American contributors: Kulka on the vascular derangements in rheumatoid arthritis, Talbott on gout, Rodnan on scleroderma, Pearson on dermatomyositis, and Cohen on acute suppurative arthritis. Rheumatoid arthritis is extensively covered in some 200 pages with a balanced discussion of the newer basic laboratory research and the practical problems of management.

Singling out specific chapters for comment is difficult in a book of such uniform excellence, yet I must mention "Auto-immunity and the rheumatic diseases" by Anderson and Buchanan. Surgery in rheumatoid arthritis and in osteoarthritis is reviewed in short but masterful discussions. Dr. J. C. Scott, in his chapter on osteoarthritis, makes the startling statement that "there are at present more than 150 patients on the waiting list of the Nuffield Orthopedic Center awaiting surgical treatment for osteoarthritis of the hip."

All in all, a superb volume, packed with up-to-date information, interesting, well written, and worth any physician's purchase.

PAUL J. BILKA, M.D.
*Minneapolis*

## NEW BOOKS RECEIVED

**Trends in New Medical Schools**
edited by HANS POPPER, M.D., 175 pp., Grune & Stratton, Inc., New York, 1967. $7.50

**Diagnostic Cell Pathology in Tissue and Smears**
by HERBERT E. NIEBURGS, M.D., 310 pp., ill., Grune & Stratton, Inc., New York, 1967. $17.50

**Cardiac Radiology**
by EDWARD F. DUNNE, M.B., 256 pp., ill., Lea & Febiger, Philadelphia, 1967. $12.50

**Cellular Aspects of Developmental Pathology**
by ROBERT P. BOLANDE, M.D., 374 pp., ill., Lea & Febiger, Philadelphia, 1967. $16.50

**Kinesiology and Applied Anatomy:**
**The Science of Human Movement**
by PHILIP J. RASCH, Ph.D., and ROGER K. BURKE, Ph.D., 3d ed., 488 pp., ill., Lea & Febiger, Philadelphia, 1967. $8.50

**Garlock's Surgery of the Alimentary Tract**
by JOHN H. GARLOCK, M.D., 494 pp., ill., Appleton-Century-Crofts, New York, 1967. $19.50

**Burns, Shock, and Plasma Volume Regulation**
by CARL A. MOYER, M.D., and HARVEY R. BUTCHER, JR., M.D., 428 pp., ill., C. V. Mosby Co., St. Louis, 1967. $18.50

**Drugs of Choice 1968-1969**
edited by WALTER MODELL, M.D., 907 pp., C. V. Mosby Co., St. Louis, 1968. $17.75

**Corneal and Scleral Contact Lenses:**
**Proceedings of the International Congress**
edited by LOUIS J. GIRARD, M.D., 512 pp., ill., C. V. Mosby Co., St. Louis, 1967. $29.50

**Handbook of Fractures**
by EDGAR LEE RALSTON, 299 pp., ill., C. V. Mosby Co., St. Louis, 1967. $10.75

**The Neuron**
by HOLGER HYDEN, 393 pp., ill., American Elsevier Publishing Co., Inc., New York, 1967. $19

**Progress in Brain Research:**
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1. Stoesser, A., and Nelson, L.: Clinical evaluation report, July, 1967

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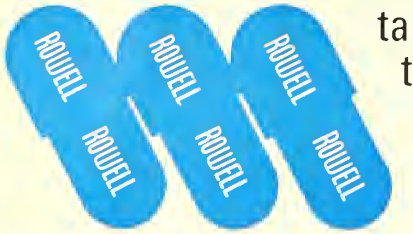

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# Early Neurovesical Dysfunction in Children

JOHN A. OCHSNER, M.D., and JOHN P. SMITH, M.D.

WITH THE INCREASING attention given to abnormal voiding patterns and urinary tract infection in children, urologists are recognizing abnormalities of bladder function unrelated to obstruction. Neurovesical dysfunction is of particular concern because it is often seen without apparent cause. The following case report from Children's Hospital, Columbus, Ohio, illustrates this problem.

## CASE REPORT

A 5-year-old girl was admitted because of an abnormal voiding pattern. She had wet her bed regularly, and she had foul-smelling pants during the daytime. There was no history of flank pain, dysuria, or serious illnesses. She had not been on medication.

She appeared normal upon examination, including neurological studies. There was an active clitorocavernous reflux. Her urine was cloudy, with a significant amount of pyuria and bacteria. A catheterized urine culture demonstrated E. coli in quantities greater than 30,000 colonies per milliliter. Other laboratory studies were normal. The intravenous pyelogram demonstrated normal renal outlines and normal collecting systems. There was no evidence of spina bifida occulta. The voiding cystourethrogram demonstrated a large bladder due mainly to segmental dilation of the fundus. There was no vesicoureteral reflux. The bladder neck and the urethra were normal. She maintained a persistent residual urine of 30 to 100 cc. Ascendant lipidol was not eliminated from the bladder in forty-eight hours, confirming incomplete emptying. A cystometrogram was done but was not satisfactory, as is often the case in 5-year-old children who will not give full cooperation. An electroencephalogram was normal. The anal sphincter electromyogram demonstrated decreased motor units. (This was the only abnormal function to suggest a neurological disorder other than the bladder dysfunction.) On cystoscopic examination, the bladder was mildly trabeculated, but the bladder neck and the urethra were normal in appearance.

Her urine cleared on antibiotic therapy, but the abnormal voiding pattern persisted. Urecholine was of no help in lowering her residual urine. The thin-walled, decompensated dome of the bladder was surgically excised. The bladder neck appeared to be normal, but an anterior Y-V vesicoplasty was performed to decrease the vesical outlet resistance. She was discharged two weeks later without residual urine and with some improvement in her voiding pattern, and she was instructed to void often enough to prevent overfilling of the bladder.

## DISCUSSION

The evaluation of these patients must satisfy three conditions: [1] that there is no obstructive lesion, [2] that there is or is not an infection,

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and [3] that there is or is not a neurological disorder.

In order to satisfy these criteria, the following tests are carried out: A complete urological evaluation is mandatory. This should include urinalysis, urine culture, creatinine clearance, intravenous pyelogram, voiding cystourethrogram, and cystoscopy. The bladder itself can be further evaluated by such tests as the cystometrogram, the urocholine denervation sensitivity test, direct (transurethral) sensory testing of the bladder, sacral root stimulation, and cine voiding cystourethrograms.

The neurological evaluation is extremely important. Subtle abnormal findings may assist in directing a more precise neurological evaluation which may include spinal fluid analysis, myelogram, electroencephalogram, and anal sphincter electromyogram. A commonly associated lesion in these patients is spina bifida occulta, but very often an exact neurovesical defect cannot be demonstrated.

Infection is first to be eliminated when possible. This can be difficult if there is significant residual urine. Urocholine and timed voiding may improve bladder function and help reduce residual urine.

Surgery is often necessary when conservative management is not successful, but in this respect, several factors have to be considered. First, any part of the bladder that is badly thinned (decompensated) should be excised. Usually this means removing the dome, as this area most often shows the greatest damage. This is not to suggest that the rest of the bladder is normal; it most probably is not. Second, ureteral reimplantation may be necessary if vesicoureteral reflux is present. Third, reducing the outlet resistance is an important surgical procedure and is usually performed by an open anterior Y-V vesicoplasty at the bladder neck in conjunction with removal of a posterior wedge of tissue at the bladder neck in males. Outlet resistance can be decreased in females by transurethral resection at the bladder neck, rather than an open procedure.

Follow-up care is important. The patient should be instructed on timed and multiple voiding. Infection usually can be controlled if residual urine has been adequately reduced. These patients should be maintained on therapeutic drug control for a sufficient period of time. Periodic evaluation is necessary.

The term "neurovesical dysfunction" is used despite the fact that often a definite neurological lesion is not found. It is thought, however, that, with greater understanding of the neurovesical mechanism of bladder function, these disorders can be better classified. Although many of the evaluating tests mentioned can detect a neurological disorder, the exact etiology can remain unclear.

The term "early" is used in the title to connote that this disease is probably progressive, at least in its clinical manifestations. The case presented in this paper is not exactly "early." Many of the children that we see with this type of disorder have less obvious clinical findings than the case presented. This disorder also has been observed in adults at the Minneapolis Veterans Hospital. Usually, adults manifest a more advanced disorder, often with renal damage.

The early diagnosis of neurovesical dysfunction is stressed, particularly in children. It is our belief that a regimen of treatment will prevent progressive bladder decompensation and preserve renal function. If the treatment is unsuccessful, however, urinary diversion should be considered before serious renal damage develops.

### SUMMARY

Early neurovesical dysfunction is recognized, especially in children. An illustrated case of a clearly established neurovesical disorder is presented. Evaluation and treatment are discussed.

### CLINICAL REVIEWS

A program of lectures and discussions on problems of general interest in medicine and surgery is offered by the Mayo Clinic and Mayo Foundation at Rochester, Minn., with identical sessions on October 28, 29, and 30 and November 11, 12, and 13.

This program is acceptable for credit by the American Academy of General Practice and the College of General Practice of Canada. The registration fee is $20.

The number of physicians who can be accomodated is necessarily limited. For this reason identical programs will be offered two successive weeks. The program will be presented first on October 28, 29, and 30 and repeated on November 11, 12, and 13. Those wishing to attend should communicate with M. G. Brataas, Mayo Clinic, Rochester, Minnesota 55901, indicating which session they would prefer to attend.

## *Introduction to a series of articles concerning diseases of the skin*

Recently, Dr. J. A. Myers wrote to me about a series of articles concerning dermatologic subjects to be published in *The Journal-Lancet*. In his opinion, diseases of the skin is an important topic for the readers of the magazine, many of whom are in general practice. Almost 1 of every 5 patients who consult a general practitioner does so because of a cutaneous disorder. Rare indeed is the physician whose training in a medical school and hospital has qualified him to recognize and treat properly the diseases in this large segment of his practice. The plan is to present a paper every month or two dealing with one or a group of cutaneous disorders. Dr. Myers and I believe that the articles should be succinct with special emphasis on diagnosis and treatment. No attempt will be made to review the literature on any subject. In some instances, however, references will be cited for the reader who might wish to study a topic in more detail. Most of the discussions will concern common dermatoses since about 90% of diseases of the skin encountered in practice fall within about 12 large groups (acne, eczema, urticaria, fungous infections, benign and malignant tumors, nevi, precanceroses, and so forth).

The first paper of the series—Cutaneous Xanthoma, is presented below.

CARL W. LAYMON, M.D.

# Cutaneous Xanthoma

CARL W. LAYMON, M.D.

Minneapolis

ALTHOUGH there have been many classifications of cutaneous xanthomatosis, the one proposed by McCleary and associates[1] in 1959 seems most acceptable.

I. Associated with elevated blood cholesterol but normal neutral fat levels
    A. Primary xanthoma tuberosum
        1. Xanthoma palpebrarum (xanthelasma)
        2. Generalized xanthomatosis of the tendon sheaths
    B. Secondary xanthoma tuberosum
        1. Liver disease
        2. Hypothyroidism

II. Associated with elevated neutral fat levels
    A. Idiopathic
    B. Secondary
        1. Diabetes
        2. Glomerulonephritis
        3. von Gierke's disease

III. Associated with normal blood lipid values
    A. Nevoxanthoendothelioma (juvenile xanthogranuloma)
    B. Histiocytosis X
    C. Xanthoma disseminatum

Patients with xanthomas characterized by hypercholesterolemia have clear blood serum. There is a cloudy or milky serum only when the neutral fat is elevated. The cutaneous lesions of individuals who have idiopathic hypercholesterolemia are practically identical with those who have hyperneutrolipemia. About 60% of the patients with xanthelasmas of the eyelids do not have hyperlipemia. They probably represent an abortive form of xanthoma tuberosum.

In group III, characterized by normal blood lipids, several disorders are included which are characterized by xanthomatous eruptions but which do not have an actual disturbance of lipid metabolism.

### CLINICAL PICTURE

1. *Xanthoma palpebrarum (xanthelasma).* In this type yellow plaques and papules are limited to the eyelids. In my opinion, excision is the best form of treatment. A local anesthetic such as a 1% solution of lidocaine hydrochloride (Xylocaine®) is injected into the loose tissues beneath

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so that the plaque is raised above the surface of the surrounding normal skin. The lesion can then be removed easily with small, curved eye scissors. Suturing is rarely necessary and bleeding, which as a rule is slight, can be controlled by pressure. Chemocautery, such as trichloracetic acid, has also been used as well as electrodestruction by desiccation or cauterization, but healing is slower and thick scars are more apt to occur.

2. *Eruptive type.* The disorder is characterized by a widespread or generalized eruption consisting of small yellowish-orange papules or nodules which usually occur suddenly and have no predilection for any specific area. Xanthoma diabeticorum is a good example. The lesions may also appear in patients with hypothyroidism or disease of the liver.

3. *Xanthoma tuberosum.* The lesions are nodules or plaques and are usually located on the knees, elbows, eyelids, ankles, knuckles, and buttocks. Tendon sheaths may be involved occasionally with or without cutaneous lesions, and there may be hypercholesterolemia or hyperneutrolipemia. The cutaneous lesions show little tendency to regress. The life expectancy is shortened by hypertension, cardiovascular accidents, and hepatic complications.

4. *Mixed type.* Occasionally in liver disease the original lesion may be of the eruptive type, but tuberous nodules may develop later over the extensor surfaces of the extremities such as one sees in ordinary xanthoma tuberosum.

5. *Xanthoma disseminatum.* This is an exceedingly rare type of xanthoma and the lesions are small orange or yellow papules located in the axillas, groins, flexor surfaces of the extremities, and mucous membranes. These locations stand in direct contrast to ordinary xanthoma tuberosum in which the lesions are on the extensor surfaces. Blood lipids are normal in this group.

6. *Histiocytosis X.* This category includes eosinophilic granuloma of bone, Schüller-Christian disease, and Letterer-Siwe disease, all of which are basic disorders of the reticuloendothelial system rather than primary disturbances of lipid metabolism.

The mildest form is eosinophilic granuloma of bone which is characterized usually by a single lesion occurring in children or young adults.

Letterer-Siwe disease manifests itself in infancy or early childhood. It is usually fatal and the lesions are widely distributed through the soft tissues, especially adipose, and the skeleton. There may be enlargement of the spleen, varying degrees of hepatomegaly, and osseous involvement. Purpura is usually a prominent feature. The cutaneous eruption may occur on the scalp, neck, face, trunk, and extremities, and most lesions are hemorrhagic. The lesions on the scalp may simulate seborrheic dermatitis.

Schüller-Christian disease, as a rule, is more chronic but may be rapid and fatal. The characteristic triad of symptoms includes exophthalmos, diabetes insipidus, and osseous lesions. Brown pigmentation and nodular xanthomas have also been reported to be associated with the disorder.

*Therapy.* There is no satisfactory treatment for xanthoma tuberosum. A low-fat, low-calorie diet may result in a decrease of blood cholesterol and of the size of the nodules but not in complete recovery. I have had little experience with drugs such as aluminum nicotinate which are supposed to reduce the amount of cholesterol in the serum and tissues. Surgical excision may be employed for large xanthomas and lesions on the tendon sheaths. Lever,[2] in 1954, found that the intravenous injection of 50 mg. of heparin diminished the amount of cholesterol in the plasma in primary hypercholesterolemic xanthomatosis and the amounts of all of the lipids in idiopathic hyperlipemia. He believed that prolonged therapy with heparin might reduce the elevated lipid levels in both diseases.

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# Health Services in Israel

RONALD OLIN, M.D.

Fargo

THIS REPORT is a review of health services in Israel including its past achievements, its present problems, and its hopes for the future. It is based on the author's observations as a member of the Fact Finding Committee of the American Physicians Fellowship of the Israel Medical Association that visited Israel from April 5 to April 18, 1967, and from reviewing the opinions of Israeli physicians in the Quarterly Review of the Israel Medical Association, Overseas Fellowship.

Before the Six-day War in June, 1967, Israel had a population of 2.5 million people with approximately 5,000 physicians. The physician:patient ratio of 1:430 was one of the highest in the world. Since the war, an additional 1.3 million Arabs now live in the "occupied territories" and Israel is responsible for their health. The majority of physicians are over the age of 50 and came from European countries before and following the Nazi holocaust. They practice a high standard of medicine and are proud to live in Israel and do their part in resettling the land. They are carrying on in the proud tradition of the hero of most Jewish physicians, Maimonides, whose cenotaph is in Tiberias on the Sea of Galilee. At present, the immigration of physicians has virtually ceased. The 2 medical schools will be required to provide new physicians.

### MEDICAL EDUCATION

The Hebrew University Hadassah Medical School in Ein Kerem, 8 miles south of Jerusalem, was the first medical school in Israel and has a gradaution class of 70 to 85. Professor Lipman Halpern is the dean. The Hadassah Medical Complex is a 250 million dollar enterprise consisting of medical and nursing schools, outpatient and inpatient facilities, and research laboratories. It has a staff of 200 physicians and is the "Mayo Clinic" of the Middle East and North Africa. It is endowed by funds sent by the Hadassah Women's Organizations of Canada and the United States.

The new Tel Aviv University Medical School commenced with the teaching of clinical medicine. In October 1966, it began the full six-year course by admitting 36 students for the freshman year. It will have a graduation class of 50 to 60 and Professor André de Vries is the dean.

There is a high standard of instruction in the 2 schools. Tuition is often subsidized by the government. The basic sciences are taught in English and clinical medicine in Hebrew. The internship is for one year, but there is some thought that it should be extended to two years. Only a few hospitals have comprehensive courses for postgraduate studies and most do not.

### DIVISIONS OF HEALTH SERVICES

Israel's main health organizations are the Ministry of Health, the Worker's Sick Fund or Kupat Holim, Hadassah, and Malben. The Ministry of Health is responsible for public health and preventive medicine, the maintenance of the majority of hospitals, and the supervision of all existing health institutions. The ministry is the supreme authority in the field of health and medicine. Kupat Holim is the largest voluntary health insurance organization and provides medical care for 70% of the population. Hadassah maintains the medical school and the University Hospital in Ein Kerem. Malben supervises the hospitalization of the chronically ill among new immigrants. Municipal authorities, the Army Medical Corps, and a few small sick funds and charities are also active in the field.

### THE HISTADRUT AND KUPAT HOLIM

Israel is a socialized democracy in which labor has always played an important role. At the beginning of this century, the first pioneers laid the foundation of a Jewish labor movement in Palestine and the Agricultural Workers' Union was established in 1911. Following World War I, a new flow of young pioneers came to the country. In 1920 they joined with the already existing labor groups to form the Histadrut or General Federation of Jewish Labor. The Histadrut is now the largest voluntary organization in Israel and represents 90% of all of the workers. Among

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the objectives of Histadrut are: (1) the development of agricultural settlements, industrial enterprises, and consumers cooperatives, (2) protection of the workers' interest and improving working conditions, (3) promotion of Hebrew among the working population, and (4) integration of Arab workers into the social and economic life of the country. The present premier of Israel, Levi Eshkol, is a member of the Mapai party whose power stems directly from the Histadrut.

An important branch of Histadrut is the Workers' Sick Fund, or Kupat Holim, which provides unlimited medical services to its enrolled membership. Kupat Holim was founded in 1911 by a group of agricultural workers with an initial membership of 150. It was based on the principle of mutual aid between struggling settlements and established, prosperous ones. With the creation of the Histadrut in 1920, the existing, separate, mutual aid funds were merged into Kupat Holim. At present, some 90% of the population belong to some sick fund and 70% of these are registered with Kupat Holim. The dues to the health fund are deducted from wages. Members pay, according to their income, an average of 2.5% of their earnings. An additional 2% is paid for family coverage. By the end of 1964 Kupat Holim maintained, among other facilities, 998 clinics, 9 general, maternity, and special hospitals, and 2,131 beds in convalescent and rest homes. Kupat Holim members and their families receive both inpatient and outpatient care in facilities staffed only by Kupat Holim personnel. In addition to membership dues, Kupat Holim income is derived from employers' contributions, government subsidies, and payment for services by noninsured dependants. In 1965/1966, Kupat Holim had a deficit of 17 million pounds (3 Israeli pounds = 1 American dollar).

In absolute numbers, physicians employed by Kupat Holim dominate the Israel Medical Association. By March 1965, 2,610 physicians and dentists were on the monthly payroll. Kupat Holim provides a research facility for its physicians at the Rogoff Medical Research Institute at Beilinson Hospital in Tel Aviv. Kupat Holim has otherwise no influence in the realms of medical education.

### KUPAT HOLIM CLINIC SYSTEM

In Israel there is a definite distinction between clinic and hospital physicians. Kupat Holim maintains clinics in every urban and rural community with the number of medical personnel proportional to the needs of the area. Each urban district clinic serves about 6,000 patients and is staffed with general practitioners, each taking care of a fixed number of families in the area. If necessary, the general practitioner may refer patients to specialists associated with the clinic. These clinics also provide nursing, physiotherapy, laboratory, and pharmaceutical services. Village clinics serve a single settlement and have a general practitioner and nurse or only a visiting physician. A team of public health nurses takes care of local nursing services. Because of the scarcity of hospital positions for staff appointments, young specialists doing general practice may also be employed. A clinic physician is overworked and may see 60 to 80 patients a day. The clinics are overcrowded and there is a shortage of staff. Israeli patients are said to be more health conscious and to see their physician twice as often as patients abroad. A clinic physician cannot accompany his patient into the hospital where only complicated cases are treated. He is under contract with Kupat Holim and committed to clinic work for the rest of his practicing life. This tends to frustrate him and dampens his spirit for advancement and his desire to keep up-to-date.

### HOSPITAL PHYSICIANS

In the hospitals there is again a definite distinction between a junior physician and a department head. This represents the outmoded European hierarchy system with the department head in an exalted position and his junior physicians having little authority or responsibility. Promotions of junior physicians to positions of more authority are uncommon if they are below the age of 50. A junior physician may work a 70 to 80 hour week, leaving little time for research or reading.

### SALARIES

Israeli physicians are all on salaries and are grossly underpaid. Even when specialized, they often earn only a little more than the physician who goes to a clinic immediately after graduation. A Kupat Holim general practitioner earns £ 1300 to 1600 ($433 to 533) per month at each clinic and commonly works at two or three clinics. A department head in a hospital earns £ 1650 ($550) per month, exclusive of fees from private patients. In comparison, an Israeli plumber or teacher earns £ 500 to 800 ($166 to 266) per month. Taxes are high in Israel and have been higher since the Six-day War. One department head is known to go to another hospital and work weekend shifts to earn extra money.

Hospital physicians, unless they are department heads or higher, are not allowed to see private patients. In actual fact, all Israeli physicians do, no matter what their rank. Even Kupat Holim physicians are engaging in private practice in violation of their working contract. A patient seeing his doctor at home against payment is assured priority treatment the next day in the clinic.

In government hospitals, physicians are also not allowed to see private patients by the Ministry of Health, but they do. The Ministry of the Treasury insists that they pay income tax on the fees from private patients. Since physicians keep no fee records, they and the tax department often indulge in undignified haggling.

In April 1967, the Israel Medical Association called 1,000 physicians out on a twenty-four-hour strike to abolish "free overtime." The physicians claimed that they must put in 8 duty shifts of thirty- to thirty-six hours each month without extra pay in addition to their normal working hours. If they worked more than their quota of duty shifts, they were paid at a rate of IL33 ($10) a shift while the X-ray technicians who take orders from the same physicians received IL68 ($23) for the same shift. However, the treasury refused to change the current contract which expires in April 1968, for fear of starting another cycle of wage demands.

### THE "BRAIN DRAIN"

Approximately 500 physicians have left Israel with an estimated 100 in 1966. Most are young, recently graduated, and say that they are going abroad for postgraduate studies. Their reasons for leaving are the antiquated working methods of Kupat Holim, the lack of staff positions in hospitals, the unwillingness of the government or Histadrut to increase their salaries, and the basic dishonesty of having to see private patients. Three consecutive neurosurgeons, each head of a department at Tel Hashomir Hospital in Tel Aviv, have left the country. If Israel has positions for a certain number of endocrinologists in its clinic and hospital system and these are all filled, then there is no point in a young physician studying endocrinology because an opening will not be available for him. Most emigrating physicians come to Canada or the United States where they seek financial security. Before the Six-day War, Israel estimated its shortage of physicians at approximately 300.

The Hebrew University Medical School has asked its students to sign a "voluntary pledge" to stay in Israel three years after graduating. It is generally felt that such a pledge is not legally binding and a student may change his mind.

### THE SOROKA PLAN

There is no doubt that Kupat Holim has played a major role in the development of health services, especially between 1948 and 1961 when 1 million immigrants entered. Of these, over two-thirds became members of Kupat Holim. However, it must now face the problems of bad labor relations with personnel, antiquated working methods at clinics, financial deficits, and lack of adequate staff and equipment especially in border towns and settlements.

In April 1954, a National Insurance Law was introduced with coverage only in the 4 categories of maternity, old age and survivors insurance, industrial injury insurance, and family allowances. In June 1957, the Ministry of Labor appointed a commission to study the possibility of introducing a compulsory health insurance system. In December 1958, the committee submitted its report to the government recommending the introduction in 2 stages of such a scheme by expanding the present National Insurance Law and implementing and coordinating it through the existing sick funds. However, these recommendations were not adopted and Kupat Holim continued to lose prestige with the public.

In September 1966, Mr. Moishe Soroka, the treasurer of Kupat Holim, in the newspaper DAVAR, acknowledged the problems and proposed that all health services (including Kupat Holim) come under government authority in order to facilitate the setting up of a compulsory national health insurance system. This would be maintained and financed through general revenue and not be insurance contributions. In April 1967, the *Jerusalem Post,* in commenting on the Soroka Plan, hoped that it would include the introduction of a private practice system within its framework, allowing physicians to earn money privately and also serve their clinic patients.

The Israel Medical Association has repeatedly voiced its support for the Soroka Plan. However, there are some who doubt that the government could do more than Histadrut, and they fear the red tape and beauroeracy that would develop. The matter continues to be discussed with no changes in sight as yet.

### AUTOPSIES AND HUMAN DISSECTION

Orthodox Jews, who are a majority in Israel and in the Diaspora, feel that autopsy and dissection clash with their beliefs in the resurrection of the dead. They also believe that the body should be buried on the same day as death (Deuteronomy 22:23) and that the remains belong to the family. For many years, the Orthodox view held back the development of medical schools in Israel for it would be impossible to teach anatomy and pathology. With the creation of the state in 1948, a compromise occurred between religious and medical proponents and autopsies were sanctioned when: (1) they were legally required, (2) there was an indeterminate cause of death provided this was formally attested to in writing by 3 physicians, (3) they might help to save the lives of living patients with the same disease, and (4) in cases of hereditary diseases to safeguard the health of surviving relations. Dissection of Jewish bodies at the medical schools was permitted if the persons gave their consent in writing of their own free will provided the parts were carefully preserved and eventually buried with due respect to Jewish law. In 1953 similar provisions were incorporated into the Anatomy and Pathology Act by the Israeli Parliament. This act permitted any autopsy on medical certification of 3 physicians without regard to the wishes of the deceased or his family.

In 1966 Orthodox citizens in Jerusalem rioted and stoned police and there were many injuries. The autopsy rate at Hadassah Hospital fell from 90 to 33%. Physicians claimed that an autopsy should be done over the objections of the family, when the attending physician, the department head, and the hospital head agreed that it was essential to the public interest. The Orthodox press, the National Religious Party, and the newly created League for the Protection of Human Dignity have continued to protest and it has become a truly vexed problem.

In April 1967, 1,000 Orthodox mourners threatened to storm Tel Hashomir Hospital in Tel Aviv. Their rabbi's wife, who was 42 years old, had died from hemorrhage following the delivery of a stillborn infant. Orthodox circles claimed that she had requested from hospital officials that no autopsy be done in the event of her death, and when they received the remains there was a signed certificate that an autopsy had not been done. At the cemetery, a physician friendly to the group examined the body and noted that the heart was missing. The rabbi and mourners returned to the hospital and threatened to riot. They confronted the pathologist who told them that open-heart resuscitation had been attempted. The heart was then returned to them in a plastic bag and buried with the other remains.

### THE FUTURE OF HEALTH SERVICES

Some of the problems that Israel has with health services are not unique but universal, such as the physician shortage, the desire of physicians to practice in urban rather than rural areas, and the trend away from general practice and toward specialization. Both Israeli physicians and the public are aware that reorganization of medical services is necessary. The emotional trauma of the recent Six-day War and its aftermath have focused attention away from medical controversies to more pressing problems. There have been no further physician strikes, the Soroka Plan is still being quietly debated, and the autopsy issue is dormant for the moment. Physicians are now reluctant to "desert" Israel for abroad, and the "brain drain" has virtually ceased.

The following suggestions for reorganization of health services have been put forward: 1. A private practice system should be recognized and perhaps become a part of a national health scheme for all the people either under Histadrut or government control. At least token payments for services would help to eliminate superfluous examinations. 2. A rotational system should be set up in which clinic physicians rotate through the hospitals to follow up on some of their patients and take advantage of the educational facilities. Hospital physicians, in turn, should rotate through the clinics especially in rural and border settlements. There should be more freedom to transfer staff from place to place where they are most needed. The shortage of physicians in outlying districts could be solved by increasing the internship from one to two years with village work in the extra year. 3. A junior hospital physician should be given more responsibility in clinical work, teaching, and research without overbearing control from above. 4. Salaries should be increased. 5. The autopsy problem should be settled by compromise.

# Transactions of the North Dakota State Medical Association

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### Minot, North Dakota, May 3, 4 and 5, 1968

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## BOARD OF MEDICAL EXAMINERS

Terms Expiring 1968

| | |
|---|---|
| A. C. FORTNEY | Fargo |
| J. W. CLEARY | Bismarck |
| A. R. GILSDORF | Dickinson |

Terms Expiring 1969

| | |
|---|---|
| C. M. LUND | Williston |
| G. WILSON HUNTER | Fargo |
| F. R. ERENFELD | Minot |

Terms Expiring 1970

| | |
|---|---|
| J. H. MAHONEY | Devils Lake |
| K. G. VANDERGON | Grand Forks |
| P. ROY GREGWARE | Bismarck |

## HOUSE OF DELEGATES

### FIRST DISTRICT

| | |
|---|---|
| J. R. GOFF | Fargo |
| M. H. POINDEXTER | Fargo |
| A. C. BURT | Fargo |
| R. E. KULLAND | West Fargo |
| P. J. BEITHON | Wahpeton |
| B. F. AMIDON | Fargo |
| R. J. ULMER | Fargo |
| D. G. JAEHNING | Wahpeton |
| J. S. GILLAM, Alternate | Fargo |
| W. E. LeBIEN, Alternate | Fargo |
| R. G. GAEBE, Alternate | Fargo |
| C. K. FERCHO, Alternate | Fargo |
| E. R. WASEMILLER, Alternate | Wahpeton |
| J. F. HOUGHTON, Alternate | Fargo |
| N. S. WILLIAMS, Alternate | Fargo |
| P. H. ENGSTROM, Alternate | Wahpeton |

### SECOND DISTRICT

| | |
|---|---|
| G. H. HILTS | Cando |
| R. DONALD McBANE | Devils Lake |
| C. ROBERT MILLER | Bottineau |
| J. W. LIND, Alternate | Bottineau |
| S. J. COOK, Alternate | Rolette |
| A. R. NEUENSCHWANDER, Alternate | Rolla |

### THIRD DISTRICT

| | |
|---|---|
| J. A. SANDMEYER | Grand Forks |
| G. L. COUNTRYMAN | Grafton |
| R. H. LEIGH | Grand Forks |
| H. W. EVANS | Grand Forks |
| W. T. POWERS | Grand Forks |
| W. W. NELSON, Alternate | Grand Forks |
| W. P. TEEVENS, Alternate | Grafton |
| B. J. CLAYBURGH, Alternate | Grand Forks |
| T. L. SCHAFER, Alternate | Grand Forks |
| N. M. HELGASON, Alternate | Cavalier |

### FOURTH DISTRICT

| | |
|---|---|
| G. R. RICHARDSON | Minot |
| L. A. GILTNER | Minot |
| A. M. CAMERON | Minot |
| B. JAYAPATHY | Minot |
| W. B. HUNTLEY, Alternate | Minot |
| J. T. BOYLE, Alternate | Garrison |
| S. W. KECK, Alternate | Minot |
| HENRY KERMOTT, Alternate | Minot |

### FIFTH DISTRICT

| | |
|---|---|
| J. W. GOVEN | Valley City |
| W. A. CRAYCHEE, Alternate | Oakes |

### SIXTH DISTRICT

| | |
|---|---|
| O. V. LINDELOW | Bismarck |
| J. J. MOSES | Bismarck |
| M. A. K. LOMMEN | Bismarck |
| R. J. DUNNIGAN | Bismarck |
| M. J. E. JOHNSON | Bismarck |
| W. C. RIECKE | Bismarck |
| W. D. WALDSCHMIDT, Alternate | Bismarck |
| W. J. ORCHARD, Alternate | Linton |
| J. P. SAUER, Alternate | Bismarck |
| P. ROY GREGWARE, Alternate | Bismarck |
| G. E. TOLSTEDT, Alternate | Bismarck |
| J. W. CLEARY, Alternate | Bismarck |

### SEVENTH DISTRICT

| | |
|---|---|
| E. O. HIEB | Jamestown |
| J. V. MILES | Jamestown |
| D. M. CLEMENT, Alternate | Jamestown |
| J. R. E. BISHOP, Alternate | Jamestown |

### EIGHTH DISTRICT

| | |
|---|---|
| D. E. SKJEI | Williston |
| R. J. OLSON, Alternate | Williston |

### NINTH DISTRICT

| | |
|---|---|
| R. F. RAASCH | Dickinson |

| | |
|---|---|
| R. E. HANKINS | Mott |
| H. C. LARSEN, Alternate | Dickinson |
| N. B. ORDAHL, Alternate | Dickinson |

TENTH DISTRICT

| | |
|---|---|
| JAMES LITTLE | Mayville |
| KENNETH WAKEFIELD, Alternate | Cooperstown |

## STANDING COMMITTEES

*Committee on Medical Education*

| | |
|---|---|
| R. J. ULMER, Chairman | Fargo |
| R. C. PAINTER, Vice-Chairman | Grand Forks |
| T. H. HARWOOD | Grand Forks |
| K. W. KIHLE | Bottineau |
| G. HOWARD HALL | Fargo |
| R. D. NIERLING | Jamestown |
| R. A. OLAFSON | Fargo |
| M. H. LANE | Fargo |
| G. H. HEIDORN | Minot |
| R. B. TUDOR | Bismarck |

*Committee on Necrology and Medical History*

| | |
|---|---|
| E. H. BOERTH, Chairman | Bismarck |
| A. R. SORENSON | Minot |
| R. E. LEIGH | Grand Forks |

*Committee on Legislation*

| | |
|---|---|
| O. W. JOHNSON, Co-Chairman | Rugby |
| W. M. BUCKINGHAM, Co-Chairman | Bismarck |
| H. L. REICHERT | Dickinson |
| J. N. ELSWORTH | Jamestown |
| R. W. McLEAN | Hillsboro |
| R. D. STORY | Fargo |
| P. J. BEITHON | Wahpeton |
| MACK TRAYNOR | Fargo |
| B. J. CLAYBURGH | Grand Forks |
| R. J. ULMER | Fargo |
| C. E. JENSEN | Valley City |
| R. D. McBANE | Devils Lake |
| W. T. POWERS | Grand Forks |
| D. R. STRINDEN | Williston |
| J. W. JANSONIUS | Jamestown |
| J. H. MAHONEY | Devils Lake |
| G. R. RICHARDSON | Minot |
| R. J. DUNNIGAN | Bismarck |
| W. C. RIECKE | Bismarck |
| D. M. PFEIFLE | Bismarck |

*Committee on Public Health*

| | |
|---|---|
| PERCY OWENS, Chairman | Bismarck |
| C. O. McPHAIL | Crosby |
| A. F. HAMMARGREN | Harvey |
| H. J. WILSON | New Town |
| R. F. GILLILAND | Dickinson |
| W. L. MACAULAY | Fargo |
| T. Q. BENSON | Grand Forks |
| L. H. KERMOTT | Minot |
| R. S. WOODWARD | Jamestown |
| D. H. LAWRENCE | Fargo |

*Committee on Public Relations*

| | |
|---|---|
| W. M. BUCKINGHAM, Chairman | Bismarck |
| F. A. DeCESARE, Vice-Chairman | Fargo |
| P. B. CURTIS | Jamestown |
| R. E. HANKINS | Mott |
| W. B. HUNTLEY | Minot |
| C. E. JENSEN | Valley City |
| D. G. JAEHNING | Wahpeton |
| R. E. MAHOWALD | Grand Forks |
| L. E. BOYUM | Harvey |
| R. S. LARSON | Velva |
| WM. C. NELSON | Grand Forks |
| J. M. LITTLE | Mayville |
| W. R. FOX | Rugby |
| C. C. BORRUD | Williston |
| R. L. GESTON | West Fargo |
| L. F. PINE | Devils Lake |
| J. H. MAHONEY | Devils Lake |
| D. M. PFEIFLE | Bismarck |

*Committee on Medical Economics*

| | |
|---|---|
| O. V. LINDELOW, Chairman | Bismarck |
| J. F. HOUGHTON, Vice-Chairman | Fargo |
| E. J. BEITHON | Wahpeton |
| G. R. RICHARDSON | Minot |
| K. G. FOSTER | Dickinson |
| R. E. MAHOWALD | Grand Forks |
| M. A. K. LOMMEN | Bismarck |
| R. H. LEIGH | Grand Forks |
| R. F. RAASCH | Dickinson |
| J. H. MAHONEY | Devils Lake |
| J. R. GOFF | Fargo |
| A. C. BURT | Fargo |
| P. L. JOHNSON | Bismarck |
| D. R. STRINDEN | Williston |
| J. G. RAWLAND | Fargo |
| D. L. LAMB | Fargo |
| A. F. SAMUELSON | Bismarck |
| W. G. GARRETT | Bismarck |
| J. J. MOSES | Bismarck |
| G. E. TOLSTEDT | Bismarck |
| F. M. MELTON | Fargo |
| B. B. HUSS | Minot |
| W. B. HUNTLEY | Minot |
| B. JAYAPATHY | Minot |

*Committee on Scientific Program*

Appointment Expiring 1968

| | |
|---|---|
| G. R. SWAFFORD | Jamestown |
| K. S. HELENBOLT | Grand Forks |

Appointment Expiring 1969

| | |
|---|---|
| M. J. E. JOHNSON | Bismarck |
| LLOYD RALSTON | Grand Forks |

Appointment Expiring 1970

| | |
|---|---|
| L. A. GILTNER | Minot |
| W. L. MACAULAY | Fargo |

## SPECIAL COMMITTEES

*Committee on Cancer*

| | |
|---|---|
| C. M. LUND, Chairman | Williston |
| J. N. ELSWORTH | Jamestown |
| O. W. JOHNSON | Rugby |
| GALE RICHARDSON | Minot |
| JOHN GILLAM | Fargo |
| WALLACE NELSON | Grand Forks |
| L. W. LARSON | Bismarck |
| R. B. TUDOR | Bismarck |
| H. C. LARSEN | Dickinson |
| R. M. BERG | Bismarck |
| G. L. COUNTRYMAN | Grafton |

*Committee on Nursing Education*

| | |
|---|---|
| R. S. LARSON, Chairman | Velva |
| N. F. GOLTZ | Fargo |
| C. A. BUSH | Beach |
| ALICE PETERSON | Bismarck |
| M. M. STUMP | Minot |

*Committee on Maternal and Child Welfare*

| | |
|---|---|
| R. E. LUCY, Chairman | Jamestown |
| M. H. POINDEXTER | Fargo |
| J. S. GILLAM | Fargo |
| C. J. BAUMGARTNER | Bismarck |
| B. F. AMIDON | Fargo |
| R. T. GAMMELL | Kenmare |
| ALICE PETERSON | Bismarck |
| R. J. DUKART | Dickinson |
| J. W. JANSONIUS | Jamestown |
| THOMAS SCHAFER | Grand Forks |
| W. G. GARRETT | Bismarck |
| G. E. ELLIS | Williston |
| F. A. DeCESARE | Fargo |
| R. H. LEIGH | Grand Forks |
| G. H. HILTS | Cando |
| L. A. GILTNER | Minot |

*Committee on Foreign Trained Physicians*

| | |
|---|---|
| C. J. GLASPEL, Chairman | Grafton |
| JOSEPH SORKNESS | Jamestown |
| O. W. JOHNSON | Rugby |
| J. C. FAWCETT | Devils Lake |
| H. L. REICHERT | Dickinson |

*Committee on Diabetes*

| | |
|---|---|
| E. A. HAUNZ, Chairman | Grand Forks |
| D. M. BARNARD | Fargo |
| W. H. WALL | Wahpeton |
| B. HORDINSKY | Drake |

| | |
|---|---|
| W. R. JENSEN | Valley City |
| G. H. HEIDORN | Minot |
| E. O. HIEB | Jamestown |
| K. G. FOSTER | Dickinson |
| P. F. KLOSTERMAN | Bismarck |
| W. R. FOX | Rugby |
| E. V. GILBERTSON | Devils Lake |

### *Committee on Crippled Children*

| | |
|---|---|
| P. L. JOHNSON, Chairman | Bismarck |
| C. W. HOGAN | Jamestown |
| A. E. CULMER, JR. | Grand Forks |
| D. T. LINDSAY | Fargo |
| B. A. MAZUR | Fargo |
| L. B. SILVERMAN | Grand Forks |
| G. M. HART | Minot |
| D. W. NAGLE | Fargo |
| J. M. LITTLE | Mayville |
| J. V. MILES | Jamestown |
| H. P. SMEENK | Bismarck |
| RALPH VINJE | Bismarck |
| J. V. EYLANDS | Rugby |
| E. P. WENZ | Fargo |
| G. H. HILTS | Cando |
| J. H. MAHONEY | Devils Lake |

### *Committee on Mental Health*

| | |
|---|---|
| P. J. BEITHON, Chairman | Wahpeton |
| A. C. KOHLMEYER | Fargo |
| JOSEPH SORKNESS | Jamestown |
| E. G. VINJE | Hazen |
| K. M. WAKEFIELD | Cooperstown |
| K. G. VANDERGON | Grand Forks |
| M. W. GARRISON | Minot |
| L. G. PRAY | Fargo |
| W. R. FOX | Rugby |
| M. A. K. LOMMEN | Bismarck |
| A. F. SAMUELSON | Bismarck |
| R. O. SAXVIK | Bismarck |
| L. S. RALSTON | Grand Forks |
| HANS GULOIEN | Dickinson |
| E. J. LARSON | Jamestown |
| H. W. EVANS | Grand Forks |
| M. J. OLSON | Williston |
| C. E. JENSEN | Valley City |
| BERCHMANS RIOUX | Minot |

### *Liaison Committee to the North Dakota State Bar Association*

| | |
|---|---|
| P. L. JOHNSON, Representative | Bismarck |

### *Committee on Aging and Rehabilitation*

| | |
|---|---|
| HAROLD EVANS, Chairman | Grand Forks |
| B. E. BRIGGS | Minot |
| T. E. PEDERSON | Jamestown |
| E. H. BOERTH | Bismarck |
| P. J. BEITHON | Wahpeton |
| P. L. AHLNESS | Bowman |
| E. P. WENZ | Fargo |
| D. L. LAMB | Fargo |
| N. A. MACDONALD | Valley City |
| D. F. BARCOME | Grand Forks |
| D. C. OLIVER | Watford City |

### *Committee on AMA-ERF*

| | |
|---|---|
| C. M. LUND, Chairman | Williston |
| K. G. VANDERGON | Grand Forks |
| J. D. CRAVEN | Williston |
| E. J. BEITHON | Wahpeton |
| R. D. NIERLING | Jamestown |
| T. H. HARWOOD | Grand Forks |
| F. D. NAEGELI | Minot |
| M. A. K. LOMMEN | Bismarck |

### *Committee on Pharmacy and Liaison with the State Pharmaceutical Association*

| | |
|---|---|
| O. A. SEDLAK, Chairman | Fargo |
| E. L. GRINNELL | Grand Forks |
| N. A. MACDONALD | Valley City |
| E. G. VINJE | Hazen |
| O. V. LINDELOW | Bismarck |
| V. G. BORLAND | Fargo |
| P. H. WOUTAT | Grand Forks |
| W. C. HURLY | Minot |
| J. A. BEALL | Jamestown |

### *Liaison Committee to the Woman's Auxiliary to the North Dakota State Medical Association*

| | |
|---|---|
| R. E. MAHOWALD, Chairman | Grand Forks |
| W. M. BUCKINGHAM | Bismarck |
| G. W. TOOMEY | Devils Lake |
| V. J. FISCHER | Minot |
| C. H. PETERS | Bismarck |

### *Liaison Committee to the North Dakota Dental Association*

| | |
|---|---|
| DAVID JAEHNING, Representative | Wahpeton |

### *Medical Center Advisory Council*

| | |
|---|---|
| P. H. WOUTAT, Member | Grand Forks |

### *North Dakota State Advisory Council for Hospital and Related Construction*

| | |
|---|---|
| M. A. K. LOMMEN, Representative | Bismarck |

### *State Health Council*

| | |
|---|---|
| P. ROY GREGWARE, Member | Bismarck |
| P. J. BEITHON, Member | Wahpeton |

### *Committee on Liability Insurance*

| | |
|---|---|
| JOSEPH SORKNESS, Chairman | Jamestown |
| P. H. WOUTAT | Grand Forks |
| O. W. JOHNSON | Rugby |
| O. A. SEDLAK | Fargo |

### *Committee on Cardiovascular Diseases - Liaison Committee to the North Dakota Heart Association*

| | |
|---|---|
| R. C. STORY, Chairman | Fargo |
| R. M. FAWCETT | Devils Lake |
| K. N. AMSTUTZ | Minot |
| M. J. EHLEN | Fargo |
| P. ROY GREGWARE | Bismarck |
| J. T. BOYLE | Garrison |
| J. F. HOUGHTON | Fargo |
| D. C. SMISSON | Minot |

### *Committee on Emergency Medical Service*

| | |
|---|---|
| P. H. ENGSTROM, Chairman | Wahpeton |
| D. T. LINDSAY | Fargo |
| J. B. MURRAY | Fargo |
| P. L. AHLNESS | Bowman |
| W. C. HANEWALD | Dickinson |
| K. W. KIHLE | Bottineau |
| J. W. GOVEN | Valley City |
| W. S. SKWAROK | Hebron |
| R. D. McBANE | Devils Lake |
| B. F. AMIDON | Fargo |
| W. T. POWERS | Grand Forks |
| L. H. KERMOTT | Minot |
| R. W. McLEAN | Hillsboro |

### *Crippled Childrens Services Division to the Public Welfare Board of North Dakota*

| | |
|---|---|
| D. E. SKJEI, Representative | Williston |

### *Committee on Constitution and By-Laws*

| | |
|---|---|
| RALPH DUNNIGAN, Chairman | Bismarck |
| P. O. DAHL | Bismarck |
| W. M. BUCKINGHAM | Bismarck |
| J. J. MOSES | Bismarck |

### *Committee on Medicine and Religion*

| | |
|---|---|
| G. H. HILTS, Chairman | Cando |
| F. M. MELTON | Fargo |
| J. W. GOVEN | Valley City |
| P. ROY GREGWARE | Bismarck |
| T. E. PEDERSON | Jamestown |
| G. E. ELLIS | Williston |
| H. C. LARSEN | Dickinson |
| R. K. HELM | Grand Forks |
| L. E. WOLD | Fargo |
| W. C. HURLY | Minot |
| N. O. BRINK | Bismarck |
| A. H. FORTMAN | Bismarck |

### *Medical Advisory Committee to the State Highway Department*

| | |
|---|---|
| R. W. McLEAN, Chairman | Hillsboro |
| R. R. IVERS | Fargo |
| W. C. HANEWALD | Dickinson |
| G. M. HART | Minot |
| N. S. WILLIAMS | Fargo |

### *Compact Board of Directors*

| | |
|---|---|
| P. O. DAHL, Chairman | Bismarck |
| G. CHRISTIANSON | Valley City |
| W. T. POWERS | Grand Forks |
| R. J. ULMER | Fargo |

| | |
|---|---|
| L. A. GILTNER | Minot |
| J. N. ELSWORTH | Jamestown |
| K. G. FOSTER | Dickinson |
| R. W. FRICKE | Bismarck |

*Ad Hoc Committee on Heart Disease, Cancer and Stroke and Community Health Planning*

| | |
|---|---|
| L. A. CHRISTOFERSON, Chairman | Fargo |
| E. O. HIEB | Jamestown |
| J. R. AMOS | Bismarck |
| D. A. NICELY | Dickinson |
| R. J. ULMER | Fargo |
| R. C. PAINTER | Grand Forks |
| J. W. GOVEN | Valley City |
| R. D. STORY | Fargo |
| T. H. HARWOOD | Grand Forks |
| A. M. CAMERON | Minot |
| J. D. CRAVEN | Williston |
| P. ROY GREGWARE | Bismarck |

## REFERENCE COMMITTEES

1. *To Consider Reports of President, Secretary, Executive Secretary, Treasurer and Liaison Committee to the State Bar Association of North Dakota:*

| | |
|---|---|
| ROBERT E. HANKINS, Chairman | Mott |
| ROY E. KULLAND, Vice-Chairman | West Fargo |
| C. ROBERT MILLER | Bottineau |
| DAVID JAEHNING | Wahpeton |
| WILLIAM RIECKE | Bismarck |

2. *To Consider Reports of Council, Councillors and the Representative to the Blue Shield Board of Directors:*

| | |
|---|---|
| G. L. COUNTRYMAN, Chairman | Grafton |
| R. D. McBANE, Vice-Chairman | Devils Lake |
| R. H. LEIGH | Grand Forks |
| B. F. AMIDON | Fargo |

3. *To Consider Reports of the Medical Center Advisory Council, Committee on Medical Education, Committee on Nursing Education, Committee on Maternal and Child Welfare, Committee on Foreign Trained Physicians, Committee on Diabetes, Committee on Mental Health, Committee on Aging and Rehabilitation, Committee on Emergency Medical Service and the Medical Advisory Committee to the State Highway Department:*

| | |
|---|---|
| J. V. MILES, JR., Chairman | Jamestown |
| R. J. ULMER, Vice-Chairman | Fargo |
| H. W. EVANS | Grand Forks |
| A. MALCOLM CAMERON | Minot |
| M. J. E. JOHNSON | Bismarck |

4. *To Consider the Report of the Delegate to the A.M.A., The Committee on Necrology and Medical History, the Committee on Legislation, Committee on Public Health, Committee on Public Relations, Committee on Pharmacy, Liaison Committee to the North Dakota Dental Association, Committee on Medicine and Religion and the Committee on AMA-ERF:*

| | |
|---|---|
| J. M. LITTLE, Chairman | Mayville |
| M. A. K. LOMMEN, Vice-Chairman | Bismarck |
| JOHN GOVEN | Valley City |
| B. JAYAPATHY | Minot |

5. *To Consider Reports of the Committee on Medical Economics, the Representative to the North Dakota State Advisory Council for Hospital and Related Construction, the Ad Hoc Committee on Regional Medical Program (Heart, Cancer and Stroke) and Community Health Planning, Representative, Crippled Childrens Services Division to the Public Welfare Board, Committee on Crippled Children, Committee on Cardiovascular Diseases and the Committee on Cancer:*

| | |
|---|---|
| A. C. BURT, Chairman | Fargo |
| D. E. SKJEI, Vice-Chairman | Williston |
| G. H. HILTS | Cando |
| G. R. RICHARDSON | Minot |
| O. V. LINDELOW | Bismarck |

6. *Resolutions and New Business:*

| | |
|---|---|
| E. O. HIEB, Chairman | Jamestown |
| RALPH DUNNIGAN, Vice-Chairman | Bismarck |
| L. A. GILTNER | Minot |
| J. A. SANDMEYER | Grand Forks |
| PAUL BEITHON | Wahpeton |
| JOHN GOFF | Fargo |

7. *To Consider the Report of the Committee on Constitution and By-Laws:*

| | |
|---|---|
| J. J. MOSES, Chairman | Bismarck |
| WM. T. POWERS, Vice-Chairman | Grand Forks |
| M. H. POINDEXTER | Fargo |
| R. F. RAASCH | Dickinson |

8. *Committee on Credentials:*

| | |
|---|---|
| R. J. ULMER, Chairman<br>(Also serves on Reference Committee No. 3) | Fargo |
| D. E. SKJEI, Vice-Chairman<br>(Also serves on Reference Committee No. 5) | Williston |

# PROCEEDINGS: HOUSE OF DELEGATES EIGHTY-FIRST ANNUAL MEETING OF THE NORTH DAKOTA STATE MEDICAL ASSOCIATION

### May 3, 1968 — Minot, North Dakota

## FIRST SESSION

The first session of the House of Delegates of the North Dakota State Medical Association was called to order by the Speaker of the House, Doctor P. O. Dahl, at 7:30 a.m., in the Clarence Parker Hotel, Minot, N.D.

Doctor Ulmer, Chairman of the Committee on Credentials, reported that all credentials were in order and that there was a quorum present.

Secretary Buckingham called the roll and the following doctors responded:

Doctors: J. R. Goff, Fargo; M. H. Poindexter, Fargo; A. C. Burt, Fargo; R. E. Kulland, West Fargo; P. J. Beithon, Wahpeton; R. J. Ulmer, Fargo; J. F. Houghton, Alternate, Fargo; G. H. Hilts, Cando; R. Donald McBane, Devils Lake; C. Robert Miller, Bottineau; J. A. Sandmeyer, Grand Forks; G. L. Countryman, Grafton; R. H. Leigh, Grand Forks; W. T. Powers, Grand Forks; G. R. Richardson, Minot; L. A. Giltner, Minot; A. M. Cameron, Minot; J. W. Goven, Valley City; O. V. Lindelow, Bismarck; J. J. Moses, Bismarck; M. A. K. Lommen, Bismarck; R. J. Dunnigan, Bismarck; M. J. E. Johnson, Bismarck; W. C. Riecke, Bismarck; E. O. Hieb, Jamestown; J. V. Miles, Jamestown; D. E. Skjei, Williston; R. F. Raasch, Dickinson; R. E. Hankins, Mott; James Little, Mayville.

There were 30 delegates and alternates attending. Others present were: Doctors V. J. Fischer, C. H. Peters, T. E. Pederson, E. H. Boerth, O. A. Sedlak, R. D. Nierling, J. M. Van der Linde, Keith Foster, T. H. Harwood, W. A. Wright, C. J. Klein, R. B. Tudor, R. E. Mahowald, W. C. Hanewald, Mr. David Coyner, AMA Representative, Mr. Limond and Mr. Wagner.

The first order of business before the House was the approval of the minutes of the previous year as printed in the Journal-Lancet. Doctor Kulland made the motion that the reading of these minutes be dispensed with and that they be approved as printed in the Journal-Lancet. The motion was seconded by Doctor Skjei and motion passed.

Doctor Dahl: Each year it is the privilege of the House of Delegates to hear the address of that physician who has been in charge of our Association during the previous year. It is my personal privilege to introduce at this time the State President of the Association, Doctor V. J. Fischer. Doctor Richardson, will you please escort our President, Doctor Fischer, to the rostrum.

## PRESIDENTIAL ADDRESS

### DOCTOR V. J. FISCHER

Speaker of the House, our President-Elect Doctor Peters, Officers, Councillors, Delegates, and members of the North Dakota State Medical Association

As my report has appeared in the Handbook and you, I hope, have studied this, I will not take up too much of your time here today.

There has been an ever-increasing dominant trend during the past years for collective action. There is now an awareness of this interdependence of physicians and specialists in economics, urban development, public administration, law and engineering.

I believe we, as component societies, are more aware of our close association and interdependence on our most important arm in medicine—that of the American Medical Association. I have tried to bring the story of our interdependence in the AMA to our members. I hope I have made you more aware of the services and service that the AMA brings to you. I urge all of you members, particularly the newer, younger members to take an active interest in the actions of the American Medical Association, and to support the Association with their money and their interest.

This past year I visited almost all of the district societies and enjoyed these visits, particularly for the opportunities to meet the members in their home communities.

In my report in the Handbook I listed the business functions which I attended this past year, and will, therefore, not repeat this. However, I wish to again reiterate that I was most impressed with the business of medicine in the various activities and consider the AMPAC and Public Relations meetings to be very outstanding.

Our committees have worked hard this past year, particularly the Committee on Medical Economics, and the Advisory Committee to the Regional Medical Program. I feel that the Advisory Committee made up of medical practitioners within the state should be the guiding hand for the direction of the Regional Medical Program.

Again I wish to stress that the expert guidance of our Executive Secretary, Mr. Limond, and his associate, Mr. Wagner, has been of great value to this Association and to me this past year. I wish to thank them and the rest of the office staff for their help and cooperation. I also wish to mention again the assistance given by our AMA Representative, Mr. David Coyner, and to thank him for the many times he has given of his time and interest to the better operation of the North Dakota Medical Association.

I wish to thank all of you for your help and your trust in me this past year. Many of you have worked hard and long for better medicine and implementation of medicine to the people of North Dakota. I hope I have contributed some share toward making this Association one to be proud of.

Doctor Dahl thanked Doctor Fischer and on behalf of the House of Delegates and the State Association said "thank you for your support and a year of work well done".

Doctor Dahl: It is a privilege and an honor for me to introduce the next speaker, the President-Elect, Doctor C. H. Peters.

Doctor Lindelow, as a committee of one, will you please escort the speaker to the platform.

## INAUGURAL ADDRESS

### DOCTOR C. H. PETERS

Mr. President, Distinguished Guests, Fellow-Members, Ladies and Gentlemen:

It is with particular pride and great pleasure that I stand before you today as your newly elected President. The pleasure is due to the fact that I should, in an election year, be accorded so great an honor without having to board the hustings with campaigning competitors whose hirsute endowment might seem better to qualify them. The pride is that I should be considered worthy of this honor; but pride is not unmixed with some apprehension, for with all newly elected officials, the pleasurable anticipation of the honor of the office becomes, at the moment, the awful responsibility of leadership. Leadership implies knowledge of the goals, the ability to select the path and confidence in one's companions. My confidence in you as fellow craft-members is unshakable. But what goals, then, shall we choose? What path shall we take?

Sober thought brings us to the realization that the practice of medicine is no longer the simple bond between a physician and his patient but has become a complicated relationship among the doctor, the patient, the insurance carrier and the government. No wishful thinking on our part, no change of political party, no magic formula will ever again restore to us the simple relationship which has been for centuries the bond between us and our patients. "From here to eternity" we will have to associate with the businessman and the politician.

Yet, we must continuously work to protect the interests of our patients and to do this, we must seek ways to become partners, rather than competitors, with the government.

The health of their constituents is of such import to the politician that the introduction into Congress of any bill offering any kind or measure of relief from the cost of medical care is almost sure of passage. It is as though the constituent is seemingly unaware of the fact that the cost, ultimately, is more surely out of his own pocket than if he trusted to blind luck and his statistical chances of having to pay for medical care directly.

To this end we have government programs which cover almost every type of health problem, introduced at various times by various congressmen with scant regard for the individual formats so there is overlapping of interests, conflict of aims and duplication of purpose.

In the work which we are doing on the Heart, Cancer and Stroke program, for instance, we are encountering some overlapping of program with the Comprehensive Statewide Advisory Planning Council on Health. The program which we have been pursuing in planning for heart, cancer and stroke patients is one voluntarily sponsored by this medical society and undertaken by physicians to make the most efficient and most economical use of government funds for the benefit of our patients. The Advisory Council on Health, appointed by the Governor, in accordance with Public Law 89-749, comprises a broad cut across all types of health institutions and care, presumably to benefit the law-makers' constituents.

The Comprehensive Health Planning Act of 1966 has as its purpose to bring together many fragmented programs, to coordinate and fill in gaps in health practices. We now have block grants to the State instead of the categorical sums to Heart Disease, TBC, VD, etc. Mental Health grants, for example, were increased recently for no apparent reason!

There are two main parts to this Comprehensive Health Planning Act: 1. Planning grants. 2. Grants for Delivery of Services. This act is administered in North Dakota by our State Health Department to which the Governor has appointed a Statewide Advisory Council whose purpose is to develop and establish policy. Only four physicians are on this Council: 1. Doctor Keith Vandergon, a local health officer; 2. Dr. Joe Craven representing the State Medical Association; 3. Dr. Lee Christoferson, representing R.M.P. and 4. Dean Harwood, representing training and research. The rest of this Advisory Council of (36) individuals are a cross section of our population—some connected to hospitals, to ancillary health organizations, to government agencies and political divisions of government and lay individuals in general. It is obvious that much guidance and education must be given to this group if the delivery of health services is to be developed in a logical, reasonable and economical fashion.

Thus, we as physicians, must in our local communities assume the role of leadership in community health councils to give proper direction. I plan to have much more to say on this subject in the months ahead.

The line between the constituent and the patient is like that one called the equator, which by definition, is an imaginary line which encircles the earth and divides it into two hemispheres.

If, however, we are to keep the line from separating patients from constituents we must, and I emphasize that word, we must put ourselves in the position where our voices may be heard, our judgments utilized and our ideas incorporated in the demographic thinking and planning. We must climb down out of our ivory towers to become active members of the body politic. We must keep ourselves informed of all social programs affecting medicine, work to see that medical men are appointed not only to advisory but to active service in planning and implementing health laws. We must be so aware of the changes in medical practice that we can be leaders in social and medical thinking rather than the dupes of well-meaning but medically unintelligent laymen.

Any realistic appraisal of the world today must convince us that medicine cannot be practised in a world apart; that any medical planning must be done from a demographic standpoint and must be done, if it is to be done for our patients' benefit, by clear thinking, patient-oriented medical men who can not only see today's needs, but anticipate the future.

It is not enough, however, to depend on what can be achieved by group action on a political level. Much is to be said for the old-fashioned virtue of pulling oneself up by one's own bootstraps. There are problems which we, as a medical group, can solve for ourselves, utilizing our own strengths, ideas and imagination.

I am concerned with our R.M.P. program and its development in North Dakota. We must not lose sight of the primary goals as originally outlined when this legislation was passed, namely to promote post-graduate medical education and to bring up-to-date health services to our patients. Our goals in North Dakota should be developed for the State as a whole and not fragmented in many little projects of doubtful lasting value. Let us look at the total picture of health care and education rather than just our own communities and our own self-interests. I believe the Executive Committee and the Staff of the R.M.P. program are looking for suggestions and help from this group. Now is the time to put forward constructive thoughts and ideas that will bear fruit in the years to come and not disappear for lack of support, lack of interest or lack of financing.

By proper planning and cooperation of all, this program can be made to be productive without waste of funds and could easily serve as a model for enlightened and sophisticated delivery of medical services in a sparsely populated state. Up to this point, physicians have by their own efforts developed many of the outstanding services and facilities in this state. Let us now use properly, efficiently and intelligently these new resource materials.

In closing, I want to refer back to my opening paragraph in which I said we must be aware of our goals, choose the right path and work confidently together. As I see it, our goals are the development of a genuine partnership with government, utilizing the path of active knowledge of and participation in government planning and administration. Working to improve our own abilities and strengths, by overlooking pettiness and working together for the long-term best interests of the state, we can eventually do the most for our patients and ourselves.

Gentlemen, I have every confidence in us as a group to accomplish great things. Thank you.

Speaker Dahl thanked Doctor Peters and on behalf of the members of the House of Delegates wished him well in the coming year.

He next introduced the AMA Field Representative, Mr. David Coyner and stated that if there was a delegate or a visiting physician at the State Meeting who might have any questions, Mr. Coyner would be happy to sit down and discuss them with him.

Doctor Dahl next recognized Mr. Lyle Limond and Mr. Vernon Wagner, stating that the House was most appreciative of the State Executive Staff.

At this time, the privilege of the floor was extended to Doctor Tom Pederson, Delegate to the A.M.A.

Doctor Tom Pederson: I apologize for two things. Number 1, there are in the Handbook, specific resolutions that have been recommended for consideration by the State Association and I did not report these to the Speaker in time for the Resolutions Committee of the Association to consider these. From here on, this can be remedied by the new Delegate reporting these actions of the A.M.A. to the President and the Speaker of the House, so that these resolutions may be in the Handbook and then referred to the proper Reference Committee for action and implementation.

These resolutions will now be sent directly to Doctor Little, Chairman of the Reference Committee, Number 4.

I wish it were possible for all of you to have the experience I have had. I wish this message could be gotten to the younger men of organized medicine as we must involve our younger men. I want to thank you again, and my best wishes to the new Delegate and Alternate Delegate who are succeeding me.

Speaker Dahl, on behalf of the House of Delegates, thanked Doctor Pederson for a job well done. He advised Doctor Little that he had a great area of work on the resolutions from Doctor Pederson.

Speaker Dahl: This morning we are going to have the honor of being addressed by the President of our Woman's State Medical Auxiliary. I ask Doctor Goff, as a committee of one, to escort our speaker to the rostrum, and I wish to introduce to the House, Mrs. Laurence Pray of Fargo, the President of the Woman's Auxiliary.

## ADDRESS – PRESIDENT OF THE WOMAN'S AUXILIARY

### MRS. LAURENCE PRAY

Thank you, for inviting me to address the House of Delegates. To give you a better understanding of the Medical Auxiliary, I want to mention briefly its five objectives:

1. To assist the Medical Association in its program for the advancement of medicine and public health.

2. To coordinate and advise concerning the activities of constituent Auxiliaries.

3. To cultivate friendly relations and promote mutual understanding among physicians' families.

4. To participate in any endeavor on the request of the North Dakota State Medical Association.

5. To assist in the entertainment of all conventions of the North Dakota State Medical Association.

Friendly relations have played an important role in the development of the Women's Auxiliary. On the basis of friendship and common interests, it has been possible to work effectively toward carrying out the other objectives of the organization.

Medical Auxiliaries are not independent organizations, but rather a part of the American Medical Association and its constituent societies, so basic policies are determined by that organization. We do not carry out health programs without the consent of the State Medical Association and its constituent societies.

Last June, at the National Convention in Atlantic City, the convention body passed a resolution regarding the factual and comprehensive teaching concerning venereal diseases as a part of health education in every school system in the United States. Here in North Dakota we do have the permission of the Medical Association for this program.

The film—"A Quarter Million Teenagers" was shown, and was well received, to over 2500 students in the public schools of Fargo from grades eight through twelve. A physician from the District Medical Society was present at every showing. The film was shown in Jamestown to approximately 1500 students. Think of the number that would have been reached if all districts had participated. It seems reasonable that programs on sex education and education concerning venereal diseases, should be given under the guidance of the medical profession. The Auxiliary thanks those districts who gave support to this program. In one district arrangements have been made to sponsor the film, "Drugs, and the Central Nervous System."

The Auxiliary has several package programs available under the heading of Community Service such as "Volunteer Friendly Visitor", "Block Mother Plan", and "Homemakers Service". One district is in the process of starting a Homemakers Service as a branch of the already existing "Family Service". If there is a need for any of the above services in your community, contact your Medical Auxiliary.

Health Career Clubs are sponsored in several districts and they are proving to be of help to our young people in their decision to enter the various health fields. Mrs. Robert Hankins has been serving as Regional Chairman.

Our International Health Committee has packed cartons of drug samples, bandages and supplies. We depend on you for the drug samples, and we thank you for your help in this project.

The Medical Auxiliary's Student Loan Fund receives good support. This year's donation amounted to $2,830.00. Because this is a revolving loan, the cumulative total of loans as of January 1, 1968, amounted to $77,745.00. This year we increased the interest rate on loans from 2½% to 3%, which draw no interest until after graduation. It is evident we do not maintain this fund to make money.

AMA-ERF is another program we support financially. Various fund raising projects, memorials and private gifts have allowed us to make a contribution of $1,270.29.

This record is quite good, but three years ago we set a goal for ourselves to contribute $10.00 per member to the Student Loan Fund, and $5.00 per member to AMA-ERF. Some doctors' wives have not seen fit to participate, and we have never quite made our goal.

We are proud of our Women's Auxiliary Student Medical Association Chapter of the University of North Dakota. Membership was increased 25% over last year's, which I believe makes 100%. They have had a successful year in the area of service and fund raising. The State Medical Auxiliary contributes $100.00 to the WASAMA treasury to help send a delegate to their National Convention, and one of our members acts as an advisor. Their President, Mrs. Jon Ries, was elected Regional Vice President for the 1968-69 year.

We have a member serving on the State COMPACT Board and we are glad to be represented. Mrs. Gastineau, an Auxiliary member of the National Board of Directors of AMPAC, points out: "This is the most important political year in a long time with not only the presidency, 34 U.S. Senate seats and all 435 seats in the House of Representatives being contested, but a host of state and local offices as well."

For the past two years in our state, Auxiliary participation in legislation has been nil. We are willing and able to be your ally in this field. Please ask us.

The Auxiliary membership is 351, yours is 458. How nice it would be if we could have 100% membership. When an eligible non-member doctor's wife is invited to join the Medical Auxiliary, two common answers are: "I have no interest in the Medical Auxiliary," or "I cannot afford to be a member." We would appreciate your help in this matter because we need the support and help of every eligible doctor's wife in the state.

Statewide, members are giving their time and talents to various service groups. There are few doctors' wives in North Dakota who are not busy in hospital auxiliaries, church activities, P.T.A. groups, 4-H Club work, often heading up health connected projects, and they participate in community fund drives. They are active in the fields of art, drama, music and study clubs. They are indeed a busy group of women, and yes, community leaders. I wonder if they don't get some of their inspiration from the Medical Auxiliary.

Thank you, gentlemen, for your time.

Speaker Dahl: Thank you very much for your inspiring address, Mrs. Pray. We shall certainly consider those suggestions that you advised us to consider.

He next introduced the legal counsel for the State Medical Association, Mr. Bert Wheeler, Attorney-at-Law from Bismarck. He advised the members present that if there were any legal questions, Mr. Wheeler would be available to answer them.

The Chair next appointed the Reference Committees as they were printed in the Handbook. These committees would stand as appointed except that Doctor Houghton would take the place of Doctor Amidon on Reference Committee No. 2. He advised the members that the procedure was a little different this year. It had been the desire of several of the members to attempt to get more grass root opinions, and have more members participate in the state business functions. A great many members do not know they are welcome to appear before the reference committees and take a position on the suggestions discussed by the committees. An attempt has been made to set this up so that the reference committees may meet and hold hearings so that the problems can be threshed out and members of the State Association can participate. Therefore, a time and place for the reference committee meetings has been set so that members who may wish to, may sit in and present their opinions for or against any of the problems. A letter had been sent to each member, listing the business and time and place the reference committees will meet. It is hoped this will snowball in the years to come. It is hoped the members will give their suggestions so that this can become a successful undertaking and continue to be so in the years to come. Speaker Dahl stated that some of the reference committee chairmen may wish to have an organizational meeting before the regular meeting scheduled for Saturday morning. However, he asked that they refrain from making final decisions until the hearings are over, so that the physicians in the State may appear and have an opportunity to participate.

At this time Speaker Dahl assigned reports to each Reference Committee, and the added business which the committee is to consider. This will be noted in the final reports by these reference committees.

Speaker Dahl: In regard to the Heart, Cancer and Stroke Program, we have an authority here on this subject. I would like to give the privilege of the floor to Doctor Wright, recently appointed Director of the North Dakota Regional Medical Program, to give you some information on this Heart, Cancer and Stroke committee.

Doctor Willard Wright: I would like to introduce to you a visitor and extend to him a warm welcome; Doctor Carl Hoffman, Huntington, West Virginia.

I would like, first of all, to make a few appreciative remarks. I have served the North Dakota State Medical Association over the past 40 years and I got my start in this House of Delegates. I have had the privilege of working with the AMA also. I now feel I am in a position to serve the North Dakota State Medical Association to which I am most deeply attached. I am happy to be back in North Dakota to work with the doctors, and hopefully with your help and cooperation to develop an organization which would be of great benefit to us and to the people of the state.

I would like to congratulate Doctor Fischer on his presentation of the problems of medicine. I would also like to congratulate Doctor Peters. He has a great understanding of the problems of medicine and I know you are going to benefit from Doctor Peters' knowledge, this coming year.

I will not go into a full discussion of the Regional Medical Program as there is a report printed on pages 100 to 104 in the Handbook. There are one or two points I would like to make. First of all; to define the word "regional". In the programs coming out of the government, developed by the government and by politicians, words mean a great deal. "Regional" refers to a local area. This is a program of the people and for the people and leaves all decisions, except spending the money, to local people. In the development of this program, it is our hope that every doctor and every interested citizen will participate in some manner so that we may have the benefit of their opinions and any developments will meet the wishes and fulfill the needs of people in our own area.

As far as the administrative staff is concerned, we are in a position to proceed with a little more active work. We are gathering information, trying to assist the medical profession and hospital related situation in North Dakota. It seems advisable to us that this be put together so that we can refer quickly to any aspect. We are developing information and hope to translate this into official action so that currently with a development of information, it will have the effect of making good use of the information you have, and of being the means of the people and our profession using the resources and abilities which can be developed mainly at a local level. We are very anxious to receive from this House, approval for us to make application for an Operational Grant. This would be for a type of program to set out and approve some type of plan. It is our idea that a proposal must conform to and be a part of a general plan for state improvement.

Now, we will develop some constructive thoughts as to what we would like to do in North Dakota. We would like to have the House's approval to proceed with the program. A mere collection of information is not a useful tool for improving situations unless carried out and used. I would ask this House to seriously consider giving us approval for application of so-called Operational Grants. These proposals are thoroughly studied.

The AMA recommends that state and component medical societies place increased emphasis on the liaison and representation with all governmental and voluntary agencies involved in the implementation of Public Health programs such as the Regional Medical Program and the Comprehensive Health Planning Act. We are both involved in planning for health care. Always remember there are two different kinds of planning; the Comprehensive Health Plan, acting under the direction of the State Health Department, and the Regional Medical Program. There is this clear distinction. The voluntary health plan, and the plan directed by a state agency, can go on concurrently. We can coordinate our efforts and work together. Perhaps they can do better in some phases, and we can do the things which are done better under the voluntary system. I know this is confusing and there will be possible conflicts between these two programs. I hope in North Dakota we can work together and both programs be developed for the benefit of our State.

Speaker Dahl: Thank you, Doctor Wright.

Under old business, we have several items regarding changes in the Constitution and By-Laws. The first reading and the first vote was held last year, with instructions to take this up at this meeting. If it prevails, it will officially amend the By-laws to which this pertains, and will be the law. Number one, is in regard to the change in the By-Laws to the Commission form of government from the committee form of government. I would like to have Doctor Buckingham read this from the Minutes last year.

(Doctor Buckingham, Secretary, read the following:)

RESOLUTION

"WHEREAS, the present committee system has become quite cumbersome and redundant, and

WHEREAS, this is a small society with few members available to act on committees, and

WHEREAS, many committees over the years have been appointed which now no longer serve any useful purpose,

NOW, THEREFORE, BE IT RESOLVED that Chapter VIII of the By-Laws be amended to eliminate all present committees and be replaced with a Commission system set-up. The President of the Association would appoint the committee chairmen as well as the members. Two councillors would be assigned to each Commission in order to assure better communications.

(The Commission system set-up was not read at this time as this is printed in both the Handbook and the Journal-Lancet).

(The dialogue following this resolution in last year's minutes:)

"Motion was made to adopt resolution; Doctor Beithon seconded.

Speaker Dahl: The Chair would state at this time that although it is my opinion that our first session was Friday and as this does not amend the Constitution but amends the By-Laws, you could be making a permanent amendment to the By-Laws this afternoon. Since there is a controversy about amending the By-Laws, the Chair would rule at this point that we consider this the first reading of this amendment and we will have the final action at next year's session; unless there is a request from the floor to the contrary. All those in favor? All Ayes. Motion passed. This resolution will then be up for final action at the next Annual Session in 1968."

Speaker Dahl: Thank you, Doctor Buckingham. The list of commissions are printed in the Journal-Lancet of a year ago and on the report on the Constitution and By-Laws in the Handbook, under Chapter VIII, "Commissions" they are again spelled out. Doctor Dunnigan's committee has changed just a few words on these various commissions. This does not change the context. In order to adopt this today, so that it will be officially adopted and to make it possible for Doctor Moses' committee to consider these as they are in Doctor Dunnigan's report in the Handbook, the Chair at this time would request from the floor unanimous consent that the wording of Doctor Dunnigan's committee report which is printed in the Handbook, be accepted as the wording in the resolution adopted a year ago. Hearing no objection, we have before the House at this time the question of the final adoption as an amendment to the By-Laws, as voted upon a year ago.

Doctor Powers: I move the adoption of this amendment.

Doctor Giltner: I second the motion.

Speaker Dahl: All those in favor? All Ayes. Motion carried unanimously and the Commission form of government will take effect as of now in the State Association. Doctor Moses, will you have your committee take cognizance of that action.

Doctor Buckingham, will you read Resolution No. 14 on page 215, regarding the 40 Year pins, as voted upon a year ago.

(Doctor Buckingham read the following resolution adopted in 1967).

RESOLUTION

"WHEREAS, the age that the average physician comes in to practice in the state of North Dakota is becoming older, and

WHEREAS, it is becoming evident that less physicians are becoming eligible for 50 Year honors,

NOW, THEREFORE, BE IT RESOLVED that Article IV, Section 4 of the Constitution and By-Laws be amended to read: "A reputable physician who has been practicing medicine for a period of 40 years after graduation from Medical School shall be eligible for Honorary Membership without payment of dues upon election to Honorary Membership in his local society with the approval of the State Association, through its House of Delegates".

(Dialogue)

"I move the adoption of this Resolution; Doctor Dunnigan: I second the motion. Speaker Dahl: This, of course, is definitely an amendment to the Articles of the Constitution. It can be voted on at this Session, and final approval will have to wait for one more year. All in favor? All Ayes. Resolution passed, and this will be considered the first reading and it will be brought up before the next Session for final action."

Speaker Dahl: The Chair will accept this as a second reading of this Resolution, the first reading of which was accepted one year ago.

Doctor Leigh: I move that this be adopted.

Doctor Beithon: I second the motion.

Speaker Dahl: Should this carry, it will become effective immediately as a Constitutional amendment. All in favor? All Ayes. Motion passed. The amendment to the Constitution and By-Laws is adopted.

At last year's meeting a By-Law amendment was proposed, voted upon and accepted. We will have the second reading of this today. Doctor Buckingham, will you read this amendment?

(Doctor Buckingham read the resolution—last year's minutes).

RESOLUTION

"WHEREAS, the House of Delegates of the North Dakota State Medical Association has held an Interim Meeting in early December prior to the opening of the North Dakota Legislature, and

WHEREAS, the pertinent legislation the North Dakota Medical Association is interested in, is usually not in bill form, or introduced in the Legislature before the third week in January of the legislative year, and

WHEREAS, The Interim meeting of the House of Delegates could be more effective if held in Bismarck at such a time to provide more accurate awareness of all bills submitted:

NOW, THEREFORE, BE IT RESOLVED that the Interim Meeting of the House of Delegates of the North Dakota State Medical Association be held on such a date as deemed wise by the President of the State Medical Association, and

BE IT FURTHER RESOLVED that the Legislation Committee of the North Dakota State Medical Association be instructed to meet at an appropriate time ahead of the Interim Meeting in a Legislative year, so that the House of Delegates and the Council may be thoroughly informed prior to the Interim Meeting. A report of the action of this committee meeting should also be forwarded to the constituent medical societies to enable them to take appropriate action.

I move the adoption of this resolution; Doctor Dunnigan: I second.

(Dialogue)

Speaker Dahl: "We will consider this as a first reading, and if it is passed, it will then be placed on the agenda for final action next year in 1968. All those in favor? All Ayes. Motion passed."

Speaker Dahl: This will then be considered as the second reading which will be again an amendment to the By-Laws if adopted and will take effect immediately, if it passes.

Doctor Richardson: I move that this be adopted.

Doctor Ulmer: I second the motion.

Speaker Dahl: All those in favor? All Ayes. Motion passed and this amendment to the By-laws is now in effect.

(Doctor Buckingham read communications received: namely, a telegram from Quentin Burdick to the Association, with good wishes for a successful meeting, and a communication from the Council to the House, as follows:

"The Council directs the Speaker of the House of Delegates to advise the House for the consideration of the House of Delegates the communication as presented by the North Dakota Welfare Board to the medical profession, as to the reduction of medical fees for all individuals under their jurisdiction. It is the recommendation of the Council this action be thoroughly explored and discussed with a definite action of response forthcoming from said House."

Speaker Dahl: We will not have any discussion at this time. This will be referred to Doctor Hieb's reference committee No. 6. We hope that all persons interested would appear before this committee.

Doctor Leigh: I would like to offer a thought to the House, and consideration of a resolution regarding highway fatalities. We have a law to draw blood on any deceased person involved in a highway accident. The point I would like to make is that we should be allowed to draw blood on all people involved in a highway accident. Maybe the deceased man was sober, but the other one may not be. This may be impossible to get through as a law, but I would like to see some form of action come out of the House, this year, initiating a law that would allow us to draw blood on all participants in a highway accident, whether they are right or wrong, alive, or dead. Only in this way can we protect the innocent people. I move that this be considered by the proper reference committee, and a report be turned in at our second session for action, for the consideration of drawing blood on all the drivers involved in any accidents on the highway.

Doctor Little: I second the motion.

Speaker Dahl: Is there any discussion? All in favor? All Ayes. This will be referred to Doctor Hieb's committee on New Business.

Doctor J. J. Moses: The time duration of our sessions are becoming longer at each of these meetings. I would like to move that the time of the meeting of the Second Session of the House be considered prime time and shall commence as soon as possible on the morning of the last day.

Doctor Ulmer: I second the motion.

Speaker Dahl: Is there any discussion? All in favor? All Ayes. Motion passed. The motion will be referred as new business to Doctor Hieb's committee on Resolutions and New Business.

Doctor Lindelow: The problem has arisen regarding charges on test films for chest X-rays. I think this problem should be dealt with by the House of Delegates and I would move that the problem of charges for X-rays by the T. B. Association should be considered.

Doctor Kulland: I second this motion.

Speaker Dahl: All those in favor? All Ayes. Motion passed and unless there is an objection, this will be referred to the Committee on Resolutions and New Business, Doctor Hieb, Chairman.

Doctor Dunnigan: I would like to have the House consider a resolution regarding the Long Bills that are now before Congress. For your information, the Long and Montoya Bills deal with a problem of generic drugs. These bills could actually force the physicians to use generic type drugs and it would give the Department of Health, Education and Welfare, the right to tell the physicians what drugs to prescribe. I would move that this body consider the problem of the Long and Montoya Bills.

Speaker Dahl: As the delegates know, this body took action that no resolution could be considered by this body unless it was presented before March 31st without a two-thirds vote by this body to consider this resolution. We will therefore have to have a two-thirds majority vote of the delegates to consider accepting this resolution for reference to the reference committee.

Doctor Dunnigan: I move that we consider this resolution.

Doctor Hankins: I second the motion.

Speaker Dahl: All in favor? All Ayes. The chair declares a two-thirds majority and the resolution will be considered and referred to the Resolutions Committee, Doctor Hieb, Chairman.

Doctor Gale Richardson: I move that we explore the possibility of better communications, particularly as a delegate handbook, to all the members of the Association.

Doctor Countryman: I second the motion.

Speaker Dahl: Is there any discussion? All those in favor? All Ayes. This will be given to Doctor Hieb's committee as a matter of new business.

Doctor Buckingham, Secretary, read the names of the appointees to the Nominating Committee, namely: Doctor G. W. Toomey, Doctor Sorkness and Doctor Gilsdorf.

Speaker Dahl: Because of the pertinence of the subject, it was suggested that we have a representative of the North Dakota Welfare Board address this body this morning. This came up a few weeks ago. It was our opinion that we had a great deal of business to transact and our time is short. However, on reassessment, last night we felt that perhaps this area is so important there should be an opportunity for the delegates to ask questions. It was our original intention to allot fifteen minutes of time. However, at this time we find that we can give this man 45 minutes to allow for his address and open discussion. At this time, it gives me pleasure, and it is a privilege, to introduce to the House of Delegates, a member of the North Dakota Public Welfare Department. Our By-Laws state that the privileges of the floor are only to be given to members of the House, Past-Presidents, Officers of the Association, Councillors, and Delegates to the American Medical Association. Therefore, we must have an opinion from the floor to give the privileges of the floor to the representative from the Public Welfare Board.

Doctor Miles: I move that this be granted, and that we suspend all rules of the floor to allow for this.

Doctor Lindelow: I second the motion.

Speaker Dahl: All in favor? All Ayes. The rules are suspended. Mr. Wagner, will you escort Mr. Gottfried Kuhn, Director of the Medical Services of the North Dakota Welfare Department, to the platform.

Mr. Kuhn: The first subject I will touch on briefly is the food stamp plan which is an extension of the surplus commodity food plan. This has been in since 1933 but for many years this was suspended and food was distributed to the hot school lunch programs only. About 1950 the government reinstituted a food stamp program. This has two sides to it, among others. The two acceptable ones are that it increases the diet for low income families and is an additional means of distributing certain surplus foods which glut the market. The food stamp program has been a bit slow in developing, as there were only 19 counties in March that had started distributing food stamps. The program works something like this: for a family of four that has no income, each one purchases an amount of food stamps with their own money and they get a number of free stamps. With the stamps, they purchase food from any grocery store. All public assistance cases and families in the low income bracket are eligible. For a family of four with no income, or an income up to $20.00 per month, they would buy $2.00 worth of food stamps with their own money and the government would add $50.00 of bonus stamps free. With a family of four at the median of the group with some income, they would have to buy $44.00 in stamps and to that the Federal Government adds $34.00 of free coupons. With a family of four and $295.00 income per month, $80.00 worth of food stamps would be purchased and they would get $24.00 worth of free stamps. A family of four whose income is over $295.00 per month is ineligible.

Now I will speak regarding the Crippled Childrens Services Program. On March 18th the Crippled Childrens program was lifted out of the Child Welfare Division and placed in Medical Services. There might be any number of reasons for doing this. Upon examination, one of the first things I learned was that we were indeed broke—out of money. This means that we had used up and spent all of the Federal Funds available to us for this fiscal year, up to June 30, and we have also used up all of the state money that we had to have to match the Federal dollars. This is rather critical for a number of reasons. There were four months to go with a program that is costing about $43,000 to $45,000 per month. Our state money is limited for the biennium. We will have spent all of our money by June 30th at the present rate with no further federal matching funds. We would have had no money left to match Federal dollars with state money for the next fiscal year. Between now and June 30th, with $125,000.00 of expenses and deducting that from $165,000.00 of state funds would leave us $35,000.00 to $40,000.00 to match Federal funds next year. It was not good wisdom to continue on that road. I instructed the fiscal department to discontinue writing checks. I recommended to the Public Welfare Board that we discontinue paying bills and notify each of the vendors of the problem and ask their indulgence that we may carry the bills and use our total of $161,000.00 of state money to match Federal dollars, and then come out with a program for next year that will operate at $23,000.00 per month. We must gradually reduce the Crippled Childrens Services program one way or another so we are down to $23,000.00 per month by July 1, 1968. There must be some ways to cut back on a program. We have discussed this a great deal and hope to work our way out of this one way or another.

Our goal is to damage the program as little as possible and come as close as we can to meeting this critical period. Should this not be acceptable, and we could not run it this way, or if we would be obligated to make payments, you fully understand as physicians that not only for the children but for every other vendor who gives service to the program there will be little money left for next year, if we have to pay the bills now with state dollars.

As of today we have stacked up $50,000.00 worth of bills that should have been paid. Some are wondering why this is so. The people who are involved will be informed. Then, we need to wait to see what the response is from the people who deliver the service. There are a few bills we will pay such as those pertaining to registered nurses or personal services. There are some people involved who can not afford to wait for their money. It is too late now for us to do anything about that.

Concerning the reduction in expenditures to the medical assistance program, I sensed that there are certain areas that are more vulnerable or least understood than others. I will make a point of a few. The Public Welfare Board prepared its budget for the current biennium and it went to the Budget Board of the State Legislature for $14,426,800.00. This was the budget request. The Budget Board, after reviewing all state budgets, reduced the Public Welfare Board's budget request by $508,000.00. The appropriations committee of the state legislature reduced this an additional $386,800.00. The Legislature established public policy for the Public Welfare by appropriating $13,532,000.00 which was $894,800.00 less than the original budget request. This amount of money is available to operate all programs for this biennium. At the time the legislature acted on this budget there was a great deal of conversation in Congress that there might be a substantial increase in Social Security and there was also quite a bit of conversation that Medicare might be extended and if these things were so it would reduce the need for state dollars in our assistance programs. Whether this influenced the legislature's action is not known. However, these things did not become real and there are no Federal dollars to bail out State dollars.

In reducing expenditures, Nursing homes are cut 10%, hospitals 8%, pharmacists 15%, and physicians' services 15% as well as all other medical services at 15%. The physicians were given preferential treatment in a way. The persons who are age 65 and who are assistance payment recipients are enrolled in Title XVIII and are insured with Blue Cross and Blue Shield so almost one-half of the physicians' services given to medical assistance recipients are paid at the usual and customary fee. Therefore, the 15% reduction only affects one-half of the physicians' services. However, it does affect all of the drug and other medical services. Therefore, that is why I say that the hospitals and doctors were given preferential treatment.

Some physicians say that all other persons and sellers of commodities should be cut back also. For example, the grocer. But, when we give an authorization for a person to go to the physician, there are no limitations. The physician decides what should be done and he does it. The bill is sent to us and the amount is paid by the Welfare Board. The grocer is different when taking care of public assistance customers. The grocer is not permitted to sell him as many groceries as he wishes to have or needs. The grocer only sells the amount according to the money he has in his pocket to pay for these. You are quite different from grocery stores and you cannot compare yourselves with them. We have also received an inquiry such as "why does not the cut back go across-the-board, by including the recipient as well as the physician?" We will see what the recipient receives and then draw a parallel. A widow and three children receives for food 86c per person per day or 29c per meal per day. Clothing allotment, which includes exerything that is needed, 23c per person per day. Personal needs, including everything like recreation, entertainment, gifts and all the finer things of life, 13c per person per day. Household supplies, which includes everything for a home, furniture, furnishings, cleaning supplies, etc. 7c per day. The mother has some control over the above listings but she has no control over heating, cooking, lights, water, sewer and garbage collection. These latter items must be paid or she will not have these services. If she is paying $70.00 per month rent, this would amount to $17.50 per person per month. The total family grant income would be $261.00. If we took 15% off this total, it would amount to $39.15 per month and this would have to come out of food, clothing and household supplies which would reduce these items per person per day quite drastically. I, therefore, recommended to the Welfare Board against reducing the grants to the recipients.

I am assuming that a physician's income is $35,000.00 per year and that 3% of this comes from public assistance fees. This may be a reasonable assumption since we deal with only 3% of our population. Since one-half of that is insured, the cut of 15% would amount to $78.75 per year, or $6.55 per month. This as compared to the recipient widow and three children whose budget we have just revealed to you.

We cannot predict the success or failure of our cut-back. We hope this period of time is short. We will make it work with the cooperation of the physicians. It is principally under your control. You decide what is to be done in your offices. Therefore, it will depend largely on what your reaction is to this need for the Public Welfare Board to reduce expenditures because of a lack of money. We do not want to destroy a good medical care program for people who are in need—which is what Title XIX is. We wish to avoid doing anything to destroy the basic philosophy of our present program. If the present plan does not work, we will have to attack the need for reducing expenditures from another angle.

Speaker Dahl: We will now have a question and answer period. It is the intention of the Chair to adjourn this meeting no later than 10:15. Are there any questions to be directed to Mr. Kuhn?

Doctor Lindelow: Did some doctors actually write to you asking you to cut-back on the recipient?

Mr. Kuhn: Yes some did write. It has been our privilege to work with a physician's Advisory Committee of the State Association. This has been a fruitful experience. This has been very good for our program and we go over many things with this committee. When I said there have been criticisms of this kind, I am sure it does not reflect against the Medical Association. Regarding the Crippled Children Service reduced fee schedule, we have no more reason than you have to continue this for too long. It will be taken care of in due time.

Doctor Miles: You made a statement of why the physicians are getting preferential treatment. You requested to the Physicians Advisory Committee that this be made up by physicians only. At that time it was our request that this be made across the board. We also requested that the expenses of the administrative offices be reduced. Was that accomplished?

Mr. Kuhn: No, that was the judgment of the Public Welfare Board.

Doctor Miles: Why, in the opinion of the Public Welfare Board, knowing that the funds were cut for the biennium, are there 600 more cases accepted a month with less money available. Why is there $6.00 per month more spent on each case? I would think it would behoove you to fit that into the program.

Mr. Kuhn: To do that we would have to cut back the program to eliminate the case load. These people are legally eligible for help according to the scope of the program. We would have to reduce the scope of the program.

Doctor Miles: Do you have figures for yearly incomes for pharmacists as well as the doctors?

Mr. Kuhn: I just used that for illustration.

Doctor Miles: The point being that they have been getting 50% of cost, the pharmacists are getting cost plus, and as you showed us, some of the cost plus are pluses. We do not feel there is any argument about recipients getting the full amount you can allow for clothing and food.

Mr. Kuhn: Do you feel that the pharmacists have been dealt with on top of the ladder?

Doctor Miles: I certainly do.

Doctor Richardson: It seems to me that this involves a failure and should involve admission of failure of a government agency to deliver what it is committed to do. Maybe it would be better, if you can not provide services to all, just provide to those who do need them. I think this should be pointed out to the government agency.

Mr. Kuhn: Are you talking about as far as establishing need is concerned?

Doctor Richardson: I am talking about the philosophy of providing for people who can not provide for themselves, but a great many of us do not agree with the philosophy of providing for people who can provide for themselves. I think part of your failure is due to expanding your scope beyond that which is necessary.

Doctor Leigh: As I understand it, you knew at the beginning of the biennium you were going to be short of money. How much expansion has your Public Welfare Board done at this time in personnel? Specifically, in our Grand Forks Office you keep on expanding your staff, when you know you are short of money. This does eat up a lot of money. Why are we the only ones when the shortage comes to be asked to take a cut? Why is not your staff cut, or salaries cut, if you do not have enough money?

Mr. Kuhn: I can not answer your question because this is an administrative item. The county boards determine eligibility. The one thing we have invited is that if anyone should know about someone receiving assistance who does not need it, to make a simple report so that this could be investigated. As far as the application of a conservative program is concerned, this has served an excellent purpose.

Speaker Dahl: This will have to be the last question.

Doctor Miles: I found out about this yesterday; there was a pervious Physician Advisory Committee to the Welfare Board in 1960. This was disbanded in 1961 because of a feeling that they were being used as pawns. In light of the last newspaper releases, this committee is arriving at the same feeling. We are going to have to figure out ways to combat this. We shall have to disband or work together better. As to the news releases, such as the original story that the whole deficit was caused by the doctors, this was pure distortion of facts. I wonder if we should not start our own public releases. What would you think about this?

Mr. Kuhn: This is out of my field. We discussed the newspaper releases. However, I feel that sometimes that there are some ways of saying things that are misinterpreted, or inappropriately said. I do not think that the newspaper stories, however you may interpret them, were intended to detract from the successes that we have in operating together. I would be indeed sorry if I were to learn this had been so.

Doctor Miles: I am wondering what caused this Committee in 1961 to disband.

Speaker Dahl: We will have to call a halt to this discussion. Thank you, Mr. Kuhn, for appearing and for this discussion.

(The reference committees at this time announced where and when they would meet).

Doctor Richardson: I move that we adjorn, until 1:00 p.m. Sunday.

Doctor Evans: I second the motion.

Motion passed. Recess at 10:15 a.m.

## REPORT OF THE PRESIDENT

To the Delegates, Councillors and Members of the North Dakota State Medical Association.

Sirs: As President of the North Dakota State Medical Association, I have the honor to submit a report for the year 1967-1968.

One year ago I expressed my wishes as to planning commissions and committees for review in the State Medical Society and in its Districts. Although it has not been universally accomplished, I am happy to say that these programs have been started in some of our component districts; hopefully, more will do likewise.

A dominant trend during the past years has been a growing commitment to collective action. As a profession, medicine has too long stood apart. There is now a spreading awareness of this interdependence of physicians and specialists in economics, urban development, public administration, law and engineering. There is an increasing recognition that community facilities and institutional endeavors must be integrated if principles of comprehensive care are to be translated into reality. I believe we, as component societies, are ever more aware of our close association and interdependence on our most important arm in medicine—that of the American Medical Association. In my visits to the various districts, I have tried to bring the story of our interdependence in the A.M.A. to our members. I hope I have made you more aware of the services and service that the A.M.A. brings to you.

This past year I have visited almost all of the districts and will be visiting one more society after this report is submitted. It is with great pleasure that I look back on these visits as opportunities to meet the members in their home communities and to bring greetings from the North Dakota State Medical Association. I wish to thank the societies again for their hospitality.

The business functions of the State and National Medical Associations attended this past year have included the North Dakota State Medical Association meeting, the annual meeting of the American Medical Association in Atlantic City and Interim Meeting in Houston. I have visited the State Medical Association meeting in Minnesota, the North Central Medical Conference, AMPAC in Washington, D.C., the Presidents' Conference in Chicago, the American Medical Association Public Relations Workshop, and the meeting of Blue Shield annual conference in Washington, D.C. I have been most impressed with the business of medicine in these activities and consider the AMPAC and Public Relations meetings outstanding.

In the structure of the North Dakota State Medical Association, there has been some outstanding committee work done especially in our committee on Medical Economics and the Advisory Committee to the Regional Medical Program. These and other committees have worked hard and long on the business of better medicine and implementation of medicine to the people of North Dakota.

This year marks a milestone in which there has been a closer liaison of Blue Shield and the Medical Economics Committee with cross over of membership and resultant better understanding.

The Regional Medical Program under the able direction of Dr. W. A. Wright and our Advisory Committee to the Regional Program should be guided and directed into integral service by our State Association which is the incorporating father. It is important that this program stay within the direction of the organized North Dakota State Medical Association rather than become an independent arm going in a diverse direction. I feel strongly that the Advisory Committee, made up of medical practitioners within the state of North Dakota, be the guiding hand in its direction and that this direction then be implemented by its Executive Director.

I wish to stress that the expert guidance of the Executive Secretary, Lyle Limond, and the Associate Secretary, Vernon Wagner, has been of inestimable value, and without them the office of the State Medical Association would not have been able to function. I also wish to thank the rest of the office staff for their help and cooperation. It has been a pleasure to work with them all.

This year we have been fortunate to have our A.M.A. Field Representative present for many of our district meetings. I wish to thank Mr. W. David Coyner for his assistance and the communications he brought from the American Medical Association.

I thank all of you who have placed your trust in me. The work of the North Dakota State Medical Association will continue through the years, and I hope I have contributed some share toward making this Society one to be proud of and to work for in the past year and years to come.

Thank you very much.

Respectfully submitted,
(Signed) V. J. Fischer, M.D., *President*
North Dakota State Medical Association

## REPORT OF THE EXECUTIVE SECRETARY

GENERAL COMMENTS: Your Executive Secretary is back in the saddle again and was able to attend quite a few local, state, regional and national meetings.

We were very fortunate in securing the services of Vernon E. Wagner as Assistant Executive Secretary on July 1, 1967. Mr. Wagner comes to the Association with a good background in organizational work and is doing a fine job in representing medicine in his contacts with medical and non-medical people.

Mrs. Margaret Fremming, Office Secretary, continues to carry out her duties in an exemplary manner. Her assistant, Mrs. Myrtle Kohler, has been quite ill these past few months and we have had to employ part-time help.

LEGISLATION: State legislation will concern us once again with the opening of the 41st Legislative Assembly in January 1969.

On the national scene, medical legislation continues to play a big role. Among the many bills introduced thus far, the following seem quite important:

HR 5315 allows corporate tax treatment for M.D.'s forming professional associations. S 260 prohibits M.D. ownership of drug stores, sale of eyeglasses, etc. HR15759 FDA would prepare a drug compendium including prices for all physicians and pharmacies, financed by drug companies. S 3095 and HR15757 consolidates medical education, allied health profession education, nurse training into one act to be extended with substantial added funds for medical schools to increase enrollment. S 15 make outpatient drugs a Medicare Part B benefit. S 3094 and HR15758 extends for five years the Heart Disease, Cancer and Stroke Regional Medical Centers Program with $100 million next fiscal year. S 2882 establish a commission on ethics to study problems involved in organ transplants; federal aid for kidney transplants and artificial kidneys.

PHYSICIAN'S PLACEMENT SERVICE: This office continues to attempt to give service to communities, individual physicians and/or medical groups seeking physicians.

U.N.D. MEDICAL SCHOOL SCHOLARSHIPS: The 1967 winners of the Association's Scholarship Prizes (totalling $500.00) offered at the School of Medicine were as follows:

Highest Average Mark in Anatomy—William D. Ferris, Rochester, Minnesota.

Highest Average Mark in Physiology—Pharmacology Ronald C. Wick, Fairview, Montana.

Highest Average Mark in Microbiology—Howard R. Pirch, Great Falls, Montana.

Highest Average Mark in Pathology—Lloyd K. Everson, Grafton, North Dakota.

Highest Average in The Work of The First Year—William D. Ferris, Rochester, Minnesota.

CHAMPUS: This office continued to handle the claims for the beneficiaries under the Government's Civilian Health and Medical Program of the Uniformed Services (CHAMPUS).

However, since the program has been expanded and is quite enmeshed in government "red-tape", your Executive Secretary is suggesting to the Council that Blue Shield of North Dakota be given the opportunity of handling the program with the philosophy of paying usual, customary and reasonable fees being of paramount importance.

FINANCE: The goal of having one year's operating budget was maintained last year when you consider the certificates of deposit in the headquarter's office account. It is hoped that this reserve can be kept at this level, as it should be, in the interests of good business practice.

THOUGHTS FOR THE FUTURE: 1. As citizens, we must take a greater interest and play a more active role in politics beginning on the local level. This is a very important election year in North Dakota and throughout the nation. The Presidential and Congressional elections take place this year.

2. Plans should be made shortly so that a positive program of health legislation will be ready for presentation to the next (41st) Legislative Assembly in January 1969.

3. The Officers, Councillors and Delegates should give serious thought to establishing a list of priorities as to the suggestions and recommendations of the American Medical Association as well as this Association.

What are our primary targets? What are our secondary targets?

Should our greatest involvement be in the area of comprehensive health planning, regional medical program or some other area?

Some type of assessment should be made as to our future goals.

ACKNOWLEDGEMENTS: Your Executive Secretary wishes to express his sincere appreciation to our President, V. J. Fischer, M.D., for his efforts in behalf of this Association. Doctor Fischer made many trips both in and out of the State on Association business.

My sincere thanks also go to those other members with whom this writer has had occasion to work this past year on committee assignments and the several other programs of the Association.

Respectfully submitted,
(Signed) Lyle A. Limond, *Executive Secretary*
North Dakota State Medical Association

## SECRETARY'S REPORT

The following report of the Secretary is respectfully submitted:

Membership: The total membership for 1967 was 500. Of this number 458 paid the regular membership fee, 6 were on a retired basis, 5 on a limited basis, 2 were associate members and 29 were Honorary. Seven physicians passed away during the year and several have left the state.

### MEMBERSHIPS OF DISTRICT MEDICAL SOCIETIES AS OF DECEMBER 31, 1967

| Dist. | Reg. | Ret'd. | Ltd. | Assoc. | Hon. | Total | A.M.A. |
|---|---|---|---|---|---|---|---|
| First | 106 | 5 | 1 | – | 4 | 116 | 115 |
| Second | 36 | – | – | – | 2 | 38 | 37 |
| Third | 73 | – | – | – | 6 | 79 | 78 |
| Fourth | 57 | – | 1 | – | 7 | 65 | 63 |
| Fifth | 10 | – | – | – | – | 10 | 10 |
| Sixth | 87 | – | – | 2 | 5 | 94 | 90 |
| Seventh | 32 | 1 | 2 | – | 1 | 36 | 36 |
| Eighth | 22 | – | 1 | – | – | 23 | 22 |
| Ninth | 25 | – | – | – | 4 | 29 | 27 |
| Tenth | 10 | – | – | – | – | 10 | 10 |
|  | 458 | 6 | 5 | 2 | 29 | 500 | 488 |

| | |
|---|---|
| 458 @ $100.00 | $45,800.00 |
| 6 @ 10.00 | 60.00 |
| 5 @ 10.00 | 50.00 |
|  | $45,910.00 |
| Additional | |
| 1 - ¼ year 1966 | 25.00 |
| 1 - Regular 1966 | 100.00 |
| 1 - ½ year 1966 | 50.00 |
| Payment for 3 years delinquent, limited | 30.00 |
| Total forwarded Treasurer during the year 1967 | $46,115.00 |

### STATE ASSOCIATION MEMBERSHIPS

| Dues payments April 11, 1967 | Reg. | Retd. | Ltd. | Hon. | A.M.A. |
|---|---|---|---|---|---|
| First District | 86 | 5 |  | 4 | 94 |
| Second District | 35 |  |  | 2 | 36 |
| Third District | 62 |  |  | 6 | 67 |
| Fourth District | 43 |  | 1 | 7 | 49 |
| Fifth District | 9 |  |  |  | 9 |
| Sixth District | 65 |  |  | 5 | 69 |
| Seventh District | 31 | 1 | 2 | 1 | 34 |
| Eighth District | 22 |  | 1 |  | 22 |
| Ninth District | 25 |  |  | 4 | 27 |
| Tenth District | 8 |  |  |  | 8 |
|  | 386 | 6 | 4 | 29 | 416 |

| Dues payments<br>April 8, 1968 | Reg. | Retd. | Ltd. | Hon. | A.M.A. |
|---|---|---|---|---|---|
| First District | 87 | 7 | | 5 | 98 |
| (1967) | 1 | | | | 1 |
| Second District | 37 | | | 1 | 37 |
| Third District | 64 | | | 5 | 67 |
| Fourth District | 44 | | | 7 | 49 |
| (1967) | 1 | | | | 1 |
| Fifth District | 9 | | | | 9 |
| Sixth District | 68 | | | 4 | 68 |
| (1967) | 1 | | | | 1 |
| Seventh District | 29 | 1 | 1 | 1 | 33 |
| ½ year | 1 | | | | |
| Eighth District | 22 | | | | 22 |
| Ninth District | 24 | | | 3 | 26 |
| Tenth District | 9 | | | | 9 |
| | 397 | 8 | 1 | 26 | 421 |

Respectfully submitted,
(Signed) Wm. M. Buckingham, M.D., *Secretary*
North Dakota State Medical Association

## REPORT OF THE CHAIRMAN OF THE COUNCIL

The First Session of the Council was held Thursday, May 4, 1967, Prince Hotel, Bismarck, North Dakota. The meeting was called to order at 7:40 p.m. by the Chairman, Dr. R. E. Mahowald. The Secretary, Dr. J. M. Van der Linde called the roll. The following Councillors responded:

Doctors: R. E. Mahowald, Keith Foster, R. W. McLean, W. R. Fox, F. A. DeCesare, Dean Strinden, J. M. Van der Linde, R. S. Larson and C. J. Klein.

Doctor P. Roy Gregware, Bismarck, was present as an observer for Doctor R. B. Tudor.

Others present were: Doctors Wm. Buckingham, V. J. Fischer, G. W. Toomey, T. E. Pederson, R. C. Painter, P. O. Dahl, E. H. Boerth, Mr. Lyle Limond and Mr. W. David Coyner, Field Service Division of the A.M.A.

The first order of business on the agenda was the reading of the minutes of the previous meetings; namely, April 28, 1966, May 1, 1966 and December 10, 1966. Doctor McLean moved, Doctor Van der Linde seconded that the reading of the minutes be dispensed with and that they be accepted and approved as printed in the agenda. Motion passed.

The Treasurer's report for the period of January 1, 1966 to December 31, 1966 was checked and discussed. Mr. Limond advised that in 1956 the Treasurer purchased bonds with the association money and these bonds are listed in this report. He is now putting the money left from the budget into C.D.'s at 4½%. These are also listed in the report. The office of the Executive Secretary is happy to report that they are again in the black.

The Executive Secretary's report of receipts and disbursements for the calendar year 1966 was then discussed. Several items were explained and there was a credit of $9,357.20 over and above the money budgeted. Mr. Limond advised the Council that the office does not have to move from their present location.

The next item of business was the report of estimated income, showing the active, retired and limited members by District Societies based on 1966 dues payments. The total membership was 509 and the estimated income was $46,385.00; the report of the Treasurer showing dues payments as of May 1, 1967 in the amount of $42,415.00; and the number of members by each district who have not as yet paid their dues were 31 regular members; retired or limited 5; potential income to be collected, $3,550.00. Doctor Mahowald suggested that this matter be brought to the attention of the House of Delegates as the members are lagging in payment of dues more this year than last year. A discussion followed on an amendment to the By-Laws which was passed at the meeting in 1966 regarding payment of dues. Doctor Strinden moved that the matter of dues being in arrears be brought to the attention of the House of Delegates. Doctor Van der Linde seconded the motion. Discussion followed. Motion passed.

The statement of receipts and disbursements for April 30, 1967 was discussed. The credit of $4,240.00 from Blue Shield was explained by Mr. Limond as an outgrowth of a meeting between a committee from Blue Shield and one from the Medical Association. At that time it was felt that the Medical Association could be of help to Blue Shield in pushing their program. In return, Blue Shield would help financially in the field of public relations under three categories: travel for the field man, rent and clerical help, or in printing brochures used for public relations. This can be explained satisfactorily to the layman, as the dues the doctors pay to the Medical Association actually come from the public; to wit, the doctor's patients. Blue Shield felt they should pay some of the cost of public relations. In sending a statement to Blue Shield, Mr. Limond lists the amount due under rent, secretarial help and some listed under the cost for the Relative Value Guide.

The next item discussed was the budget approved on December 10, 1966 with the only changes made in the office stenographers' salaries, which were increased 5%, retroactive to January, 1966 and the increase in Mr. Limond's salary of $750.00 per year, to be paid on the premium of his Retirement Insurance. Doctor Strinden moved that $1,000.00 be added to this budget to cover the motion made December 10, 1966 that this amount be allotted to the Committee on Heart Disease, Cancer and Stroke, Doctor Lee Christoferson, Chairman. Doctor Larson seconded the motion. Motion passed.

Doctor Mahowald asked for new business. Under this category the brochure from Doctor Christoferson, Chairman of the Committee on Heart Disease, Cancer and Stroke was discussed as was the latest communication from Doctor Christoferson in the form of a letter to Doctor Mahowald. It was unanimously agreed that Doctor Christoferson and his committee are to be commended for the tremendous amount of work they have done in a very short time. Doctor Christoferson submitted a statement for the monies spent by this Committee, in the amount of $1,434.07. After discussion, it was agreed that this was a very reasonable amount. Doctor Strinden moved that Doctor Christoferson be reimbursed for the actual amount of $1,434.07 spent in the committee's work. Doctor Foster seconded the motion. Motion passed.

A discussion followed on the brochure of this Committee's work. It was felt that the House of Delegates should be informed of the progress made by this Committee. This will be given to the proper Reference Committee of the House of Delegates for them to report back to the House.

Doctor Mahowald advised that there had been a lot of information received regarding insurance carried with Continental Casualty Company. Doctor Pederson, the

AMA Delegate, brought the Council up to date on the latest developments in this problem. The American Medical Association Board of Trustees has now referred this to the AMA House of Delegates meeting in June for disposition. Discussion followed and many questions were asked and answered by Doctor Pederson. Doctor Strinden moved that this be tabled and that the Delegate, Doctor Pederson, be given a vote of confidence from the Council to use his own judgment in voting on this matter at the AMA House of Delegates meeting in June. Doctor McLean seconded this. Motion passed.

Doctor Mahowald stated that he had received a communication from a psychiatrist regarding the problems he is having with the Welfare Board and various agencies. This was not a communication addressed to the Council and Doctor Mahowald stated that he felt it should be given to the House of Delegates to be referred to a committee for some decision or action on this. This was then given to Doctor Dahl, the Speaker of the House of Delegates for further disposition by the House.

Doctor Mahowald then asked each member of the Council to present any problems or suggestions he might have or advise of any matters which he wished to have taken care of by the House of Delegates.

Doctor DeCesare, Councillor of the First District, stated that he had heard that there was going to be a proposal before the House to have the next meeting in Fargo because of some celebration of the 50th year of the Fargo Clinic.

Doctor Larson of the Fourth District asked for clarification regarding help from the Minot doctors on legislation during a legislative year in Bismarck. He was advised that if help was needed from the Minot doctors, they would be called and expressly asked for help during a legislative year in Bismarck.

Doctor Strinden had no problems nor resolutions. However, he felt that there should be some specific committee appointed or some procedure set up and publicized to arbitrate matters of controversy regarding fees charged such as billings to the Welfare Department or insurance carriers when there is a dispute with these people on fees charged for medical care. Considerable discussion followed regarding this matter. Doctor Fox quoted from the Constitution and By-Laws, Chapter XIII—the Mediation Committee; namely, the Council. Doctor Mahowald pointed out that there are local grievance committees that can handle anything that comes before them, not necessarily confined to medical aspects. The Council is also the Mediation Committee and these should be sufficient.

Mr. Limond thanked the Councillors for being so understanding and kind and helpful during his illness and asked that they convey his thanks to the doctors in the district for the many letters, telephone calls and visitations.

Adjournment 10:00 p.m.

## SECOND SESSION

### Sunday, May 7, 1967 — Bismarck, North Dakota

Dr. Mahowald, Chairman of the Council, called the meeting to order at 4:30 p.m. Roll was called and the following responded including the new member from the Ninth District: Doctors W. R. Fox, R. W. McLean, F. A. DeCesare, Dean Strinden, R. E. Mahowald, J. M. Van der Linde, C. J. Klein, R. S. Larson and W. C. Hanewald, new Councillor.

Councillor, Doctor R. B. Tudor from the Sixth District, was absent and Doctor P. Roy Gregware was present as an observer for Doctor Tudor. Others attending the meeting were: Doctors C. H. Peters, R. D. Nierling, V. J. Fischer, R. C. Painter, Wm. Buckingham, G. L. Countryman, T. E. Pederson, J. J. Moses, P. O. Dahl and Mr. Lyle Limond.

Doctor Mahowald asked Doctor Dahl, Speaker of the House, for directives from the House to the Council. Doctor Dahl advised the Council that the House voted to give the prerogative of setting the dues in 1968 to the Council at their Interim Meeting in December of 1967. However, the House felt that the present dues structure should be continued until December of this year.

Doctor Dahl stated that a question was raised in the House as to whether the association's legal counsel had taken any action on reduction of Workmen's Compensation Fees for physicians' employees. Doctor Mahowald advised that this had been placed in the hands of the legal representative but as yet there has been no report on this to the Council.

Speaker Dahl mentioned the resolution passed in the House regarding a Basic Science Law, and asked what disposition should be made of this resolution. Mr. Limond suggested that this be given to the Committee on Medical Education and they should check with the Board of Medical Examiners.

Doctor Dahl stated that the House voted to instruct the AMA Delegate to favor the continuance of the AMA Disability Insurance Program in its present form. He also advised that the House voted to direct the Council to recommend to each district society that they send one man to the AMA House of Delegates meeting who would report at the subsequent meeting of the district society. This is over and above the Association's AMA Delegate and Alternate. Nothing was brought up specifically about financial help from the Association, nor that the district society should pay his expenses. This was directed to the Council as a whole.

Doctor Mahowald then asked Doctor Nierling if there was any reason the Council should consider a raise in the dues at the Interim Meeting in December. Doctor Nierling advised that if it was contemplated to hire a public relations man, or an assistant to Mr. Limond, within the next six months, there would be perhaps a necessity to raise the dues. That is why it was suggested that the Council be given this prerogative of raising the dues. Mr. Limond stated that he felt the Association would be very fortunate in securing the services of Mr. Vern Wagner, as Assistant Executive Secretary, for a salary of $10,000.00 per year to be charged entirely to the funds of the North Dakota State Medical Association. Doctor DeCesare stated that the Board of Directors of Blue Shield had voted to suspend the yearly stipend to the North Dakota State Medical Association for public relations. However, if this Association should need money for public relations that tie in with Blue Shield, the Association could make a request and Blue Shield would honor the request.

Doctor Nierling asked of the Council if they wished him to continue the program each year of buying and selling the C.D.'s. Doctor Mahowald advised that it was stated in the previous motion that the Treasurer could continue to do so. Doctor Mahowald then inquired of Doctor Nierling regarding the procedure of auditing the books of the Treasurer and Executive Secretary. Doctor Nierling stated that the books had been audited separately in Bismarck and Jamestown. Doctor Strinden made the motion that the Auditors Person and Gustin of Bismarck audit the books of the Executive Secretary in Bismarck and that Auditor Sidney Holladay audit the books for the Treasurer, Doctor R. D. Nierling in Jamestown. Doctor McLean seconded the motion and motion passed.

Doctor Dahl then brought up a directive from the House to the Council; namely, a resolution directing the Council to implement long-range planning for medical facilities. There followed a lengthy discussion on a proposed Planning Committee for Medical Facilities. The Council felt that the Committee on Heart Disease, Cancer and Stroke would cover this matter. Doctor Peters stated that he is quite sure the United States Government is going to demand a committee of this sort in the near future, and he feels that the Association would be a great deal stronger in the future of medicine if they were to have a committee of this sort. It was the consensus of the members that nothing much could be done at this time until, or if, the Feasibility Grant would be obtained.

Doctor Dahl then brought up the resolution passed by the House, directing the Committee on Constitution and By-Laws to amend the By-Laws to establish a Committee for Arbitration in each component society. Until that could be done the committee outlined the procedure for handling such differences and if the complainant or defendant is not entirely satisfied with the judgment, the matter then would be referred in writing to the Chairman of the Council. The Council would then act as a Mediation Committee as set forth in Chapter XIII of the Constitution and By-Laws.

Doctor Mahowald suggested that the Executive Committee of the Council and the Executive Secretary establish a method under which the amendment could be implemented and this should then be passed on to the component societies. Doctor Peters advised that several years ago he had made a suggestion to have the Association's attorney draw up a semi-judicial mechanism for this so that the Council would have definite procedures to follow on this thing. Doctor Mahowald advised that this is in the hands of the legal counsel to create some mechanism to follow, but so far this has not been done.

Doctor Dahl advised the Council that the House of Delegates voted to pass the recommendation by the Committee on Cancer that a Central Cancer Registry be established and follow-up be continued by the Local Registry Units. Doctor Mahowald stated that the only action required on this would be to inform Doctor Lund, Chairman of the Committee on Cancer, of the House vote in favor of his recommendation.

Doctor Dahl informed the Council of a Resolution passed regarding P.L. 89-97, as follows:

RESOLUTION

WHEREAS, P.L. 89-97 passed by the 1965 session of Congress contains many provisions which appear to permit the Department of Health, Education and Welfare to exert unusual interference and control over the manner in which medicine is practiced in this country; and

WHEREAS, Section 1801 of P.L. 89-97 was written to protect the public, the medical profession and hospitals from such interference and control; and

WHEREAS, the intent of Congress expressed in the various committee reports is very clear in that such interference and control is prohibited; and

WHEREAS, Representative Wilbur Mills, Secretary Gardner of HEW, Wilbur Cohen, Arthur Hess and other representatives of this Department have made many public commitments to honor this intent of the Congress; and

WHEREAS, a strict application of Section 1801 of the Law is the only guarantee medicine has against ultimate total federal control of medical practice which was the basis of medicine's objection to this and other socialized medical laws; and

WHEREAS, the AMA House of Delegates in Philadelphia, November-December, 1965, acknowledged the importance of a strict application of Section 1801 - P.L. 89-97, and reaffirmed its policy in December, 1966;

NOW, THEREFORE, BE IT RESOLVED that the North Dakota State Medical Association members be alerted to the possibility of violations of this Section of the Act, and

BE IT FURTHER RESOLVED that each district society report any infringement of the Act to the Councillor who will in turn report it to the State Council; and

BE IT FURTHER RESOLVED that a copy of this resolution be forwarded to the Secretary of each District society and to each member of the State Association.

Doctor Mahowald stated that he felt this was one of the most important matters that had been decided upon by the House of Delegates, and he urged that each district society report any infringement of the Act to the Councillor. Should an occasion arise this will be handled by the Executive Committee of the Council; other than that, the Council will come up with a firm program at the Interim Meeting in December.

There being no further old business, Doctor Mahowald called for election of officers. Over his objections, Doctor Mahowald was elected unanimously as Chairman of the Council. Doctor Dean Strinden was elected unanimously to the office of Vice-Chairman of the Council and Doctor John Van der Linde was elected unanimously to the office of Secretary to the Council.

Doctor Mahowald then stated that two Councillors should be elected to represent the Council on the Blue Shield Board of Directors. These two members are now Doctor Mahowald and Doctor Fox. Doctor Strinden moved that these two gentlemen serve again for the coming year. Doctor DeCesare seconded the motion. Motion passed unanimously and Doctor Mahowald and Doctor Fox will serve again the coming year as representatives of the Council on the Blue Shield Board.

Doctor Dahl, as a member of the COMPACT-AMPAC Committee thanked the Council for the excellent job they had done in procuring memberships to the COMPACT-AMPAC. The Council was represented 100% in COMPACT-AMPAC, and this was greatly appreciated.

Doctor Mahowald set the date of the interim meeting of the Council as the second Saturday in December in Fargo, providing this is satisfactory to all members of the Council. Doctor DeCesare moved that this be held the second Saturday in December in Fargo; Doctor McLean seconded. Motion passed. Doctor Mahowald then requested that the Chairman of the Council and the Executive Secretary establish a meeting place in Fargo for the Council, at a later date. This was agreed to.

Adjournment at 5:30 p.m.

## INTERIM MEETING

### Saturday, December 9, 1967 — Fargo, North Dakota

The meeting was called to order at 1:30 p.m. by the Chairman, R. E. Mahowald, M.D. Roll was called by the Secretary of the Council, J. M. Van der Linde, M.D., and a quorum was declared present.

Councillors present: Doctors R. E. Mahowald, Chairman; R. W. McLean, R. B. Tudor, J. M. Van der Linde, C. J. Klein, F. A. DeCesare, Dean Strinden, R. S. Larson, W. C. Hanewald, W. R. Fox and G. W. Toomey.

Others present: Doctors V. J. Fischer, C. H. Peters, R. C. Painter, R. D. Nierling, W. M. Buckingham, J. J. Moses, P. O. Dahl, W. A. Wright and Mr. W. David Coyner of the A.M.A., Mr. Lyle A. Limond, Mr. Vernon E. Wagner, Myrtle Kohler and Margaret Fremming.

The first item on the agenda was the introduction of W. A. Wright, M.D., who was recently appointed Director of the North Dakota Regional Medical Program. He stated there was little to report at this time but that a staff had been selected and a start had been made for collecting data so that better use may be made of existing facilities and methods devised for expanding. He will shortly be communicating with every physician, hospital and health care agency with the idea of improving all local and area services. It is his hope that all physicians will cooperate to provide better care for all people. He stated that the grant was $186,000.00 for one and a half years, the first report to be made June 1, 1968. If the original grant has not all been spent by that time, it can be extended—or more money requested. The Executive Committee of the Program consists of L. A. Christoferson, M.D., Chairman, and Doctors R. C. Painter, R. J. Ulmer, R. D. Story, J. D. Craven, E. O. Hieb, J. R. Amos, D. A. Nicely, J. W. Goven, T. H. Harwood, A. Malcolm Cameron and P. Roy Gregware, together with some lay people representing the various health agencies. Dr. Wright also requested cooperation from the Council and the Office of the Executive Secretary to assist with mailings and information.

Mr. Limond posed the question to Dr. Wright as to the possibility of the North Dakota State Medical Association receiving repayment for a sum of money advanced by it to set up the original application. Dr. Wright was unable to answer this question. The sum amounted to $1,434.07.

T. E. Pederson, M.D., Delegate to the A.M.A., next spoke briefly on the actions taken by the House of Delegates at the Atlantic City and Houston meetings. Some of the items covered were the Osteo-M.D. situation, with the possibility of trying to convert schools of osteopathy into medical schools; a more realistic stand on therapeutic abortion; the desirability of establishing a Medical Explorer Post of the Boy Scouts of America; physicians to encourage their wives to join the Auxiliary; activity of AMPAC to be emphasized; physicians to become more health care conscious since health care is the third largest industry; to encourage implementation of Title 19 on the State level; physicians to become more active on the Boards of Trustees in hospitals; and the necessity of more physicians to be involved in the implementation of the comprehensive planning act (Public Law 89-749) passed in 1966. It is not believed that the Law spells out exactly the proper definition of Public Health Services.

W. David Coyner, Field Services Division of the A.M.A., next reviewed the stand taken of that Association as concerns Senate Amendments to H. R. 12080 (Social Security Bill).

Dr. P. O. Dahl, Chairman of North Dakota COMPACT, was next requested to give a report on AMPAC-COMPACT. Dr. Dahl reminded those present that at each Interim Meeting, the Council appoints the Board of Directors for the ensuing year. He believes that the Councillor in each District should be at least partially responsible to get members. In 1966 North Dakota was the 13th in the nation, having 350 members—of this figure approximately 20-25 were not physicians. The Board of Directors is also pleased that in 1967—an off election year—217 members were secured. Dr. Nierling pointed out that composite billings which would cover Auxiliary and COMPACT dues was accepted by the Council in 1966 but apparently only two District Societies are utilizing this method.

Dr. Pederson reiterated the fact that the physicians are going to have to involve themselves in comprehensive health planning and that the physicians serving on the local boards must be powerful men. Dr. Painter advised the Council that physicians, hospital administrators and nursing home administrators in the Grand Forks area had already met together on a local basis to formulate plans. This group is organized from local care services to determine what health services they have and how many people are involved. He believes that physician strength comes from local planning.

Dr. O. V. Lindelow next appeared and reported briefly on the meeting of the Committee on Medical Economics which had been held the preceding day. He reviewed a letter which had been received from Brigadier General Norman E. Peatfield, Executive Director of the Office for the Civilian Health and Medical Program of the Uniformed Services. The contract the Medical Association currently has with CHAMPUS will end May 1, 1968 and it is possible that the Government may seek another carrier. This has not been clarified as yet.

He stated that in accordance with a Resolution formulated by the House of Delegates, meetings had been held with the Public Welfare Board concerning the fee schedule for Crippled Childrens Services and he believes that in the near future the usual and customary fees of the physicians will be paid by the Welfare Board.

He advised the Council that, according to Dr. Huntley, representing Blue Shield, that the problem of psychiatry payments is to be studied and a meeting to be held in a month or so. Dr. Lindelow stated that he felt a closer liaison was being formed between the Committee on Medical Economics and Blue Shield. He also stated that an agreement had been reached with the Welfare Board and that payments for psychiatric care would be included in the new Medical Assistance Law.

Dr. Paul Johnson, representative of the Association to the Liaison Committee of the North Dakota State Bar Association, and P. W. Lanier, Jr., representing the Bar Association, next made a presentation on Medical Malpractice. The plan presented would set up a system for screening malpractice claims, its aim being to reduce nuisance suits and to strengthen legitimate claims. With the consent of both claimant and defendant-doctor, the malpractice claim could be submitted to a panel composed of two doctors, two lawyers, and a former judge, who serves as chairman. Both the claimant and the doctor would have the right to be represented by lawyers. The panel makes no decision concerning damages, and keeps all proceedings and records confidential. If the panel finds a claim unreasonable, the plaintiff's attorney cannot under Supreme Court ruling, continue to handle the claim. Other lawyers would then be reluctant to take on the disapproved cause. If the panel finds a malpractice claim reasonable, it provides the claimant with the names of three expert witnesses who will appear in court for a reasonable fee. Expert witnesses for the defendant-doctor would be chosen from a listing submitted by the Medical Association. Mr. Lanier stated that the North Dakota Supreme Court favored such a plan. Dr. Johnson asked the Council for consideration and study of the plan for approval.

Dr. Strinden made the motion that favorable interest be expressed by the Council and that all information as pertains to North Dakota be made available by Dr. Johnson and Mr. Lanier to the Office of Executive Secretary for distribution to the Councillors and Delegates with time allowed for study. A finalized plan would be presented to both the Council and the House of Delegates at the May 1968 meeting of the North Dakota State Medical Association and a decision made at that time. Seconded by Dr. Fox and carried, unanimously.

Dr. McLean made the motion that the Council go on record as accepting this proposal, in principle. Seconded by Dr. Van der Linde and carried, unanimously.

The next item on the agenda was a recommendation from the Committee on Crippled Children. Dr. Strinden made the motion that in compliance with the recommendation of the Committee on Crippled Children that a bill be prepared restricting Crippled Childrens Services to the holder of an M.D. degree for medical care. This is to be implemented in the form of proposed legislation and the defense of same through the Legislature be by the Legislative Committee and that the Chairman of same be so instructed. Seconded by Dr. Mahowald and carried unanimously.

Dr. Buckingham advised the Council that good men must be picked to testify and have material ready to present to the Legislative Assembly in January of 1969.

Dr. Mahowald next read a letter of recommendations from Dr. Dahl, Chairman of COMPACT Board of Directors. The present Board is composed as follows: P. O. Dahl, M.D., Chairman; W. C. Hanewald, M.D., Secretary-Treasurer; G. Christianson, M.D.; J. N. Elsworth, M.D.; W. T. Powers, M.D.; R. J. Ulmer, M.D.; and L. A. Giltner, M.D. All of these members with the exception of Dr. Hanewald have agreed to serve on the Board for one more year if the Council so desires. Dr. Hanewald has requested that he be replaced and indicated that Dr. Keith Foster would be willing to serve if the Council would so choose. Dr. Dahl suggested that Dr. Roger Fricke of Bismarck be added to the Board.

Dr. McLean made the motion that the Council accept the recommendations of the Chairman, Dr. Dahl. Seconded by Dr. Van der Linde and carried, unanimously.

The remaining board member is a woman, appointed by the Medical Auxiliary annually. At the present time, Mrs. P. O. Dahl is serving in this capacity.

The next item on the agenda was the review of the May 1967 Council minutes. Dr. Tudor made the motion that the minutes be accepted as printed, without reading. Seconded by Dr. McLean and carried unanimously.

Mr. Limond next presented the proposed budget for the year 1968. Each budget item was studied and he called to the attention of the Council that certain items had, of necessity, been raised. A study of the debit and credit sheet for the year 1967 indicated that the total expenditures for 1967 would be in excess of the dues receipts. Since it is the policy of the Association to keep one year's budget in reserve, it was his suggestion that a dues increase be seriously considered.

During the closed session of the Councillors and Officers, the following actions were taken:

Dr. Hanewald made the motion that the annual dues be raised to $125.00 annually. Seconded by Dr. Toomey and carried unanimously.

Dr. Hanewald made the motion that the 1968 Budget be accepted as proposed. Seconded by Dr. McLean and carried unanimously.

Dr. McLean made the motion that the Treasurer's report as presented by Dr. Nierling be accepted. Seconded by Dr. Tudor and carried unanimously.

In considering the request of the Assistant Executive Secretary, Vernon E. Wagner, for permission to run for the 1969 Legislative Assembly, the Council indicated that they had no objection to Mr. Wagner running for the Legislative Assembly in 1969 and in ensuing years.

A sample plaque to be given in recognition of service had been obtained and was presented by Mr. Wagner. This plaque is in the form of a shield with an emblem in the center. A small brass plate bearing the recipient's name would be attached under the emblem. The cost of each shield, in quantities of 50, would be about $9.00 each. Considerable discussion followed as to the recipients of such a plaque and the question raised as to how many years back such an award would be given. Dr. DeCesare made the motion that the Council authorize the necessary expenditure of funds to purchase a plaque or other suitable memento to be given to all living past presidents and to all future presidents. Seconded by Dr. Strinden and carried unanimously.

Dr. Nierling stated that in view of all the work Mr. Gene Dresser, Business Manager of the DePuy-Sorkness Clinic, has done in connection with the office of the Treasurer, he was sure Mr. Dresser would appreciate a plaque of the aforementioned type in recognition of his services.

The motion was made by Dr. Klein that such an award be made to Mr. Dresser. Seconded by Dr. Toomey.

It was the feeling of Dr. DeCesare that an identical award would not be in order and would detract from the purpose of the approved plaque. After considerable discussion on the matter, Dr. Mahowald stated that the Executive Board would take the prerogative of modifying the motion, with the expression of appreciation to Mr. Dresser to be in a different form.

Mr. Limond next presented several miscellaneous items. The first was an inquiry from a graduate of a foreign medical school, an American citizen, who stated he had not as yet passed the E.C.F.M.G. examination. His inquiry was whether or not he would be permitted to take an internship without the E.C.F.M.G. Certificate. Dr. Peters advised the Council that an intern must have the E.C.F.M.G. Certificate if the hospital is to be accredited.

Mr. Limond next read a letter concerning the activities of the U.S. Department of Labor. The letter stated that an attempt was being made to define doctors as being under the Interstate Commerce Act and, therefore, subject to the Wage and Hour Act. Representatives of the Department are demanding to see physicians' books and records. An investigation is being made of this by the Chicago and Washington offices of the A.M.A., and further information should be made available in a short time.

Mr. Limond notified the Council that the accident insurance plan as carried by the Byrne Agency now had 45 participating, including employees and wives. The total coverage was $2,510,000 as of November 22, 1967.

A telephone directory listings booklet for physicians and surgeons was given to each of the Councillors and Officers for their study. This Guideline was prepared by the Judicial Council of the A.M.A. It will be discussed again in May at the annual meeting after it has been studied.

Mr. Limond next read a letter directed to C. H. Peters, M.D. from Daniel Buchanan, a former employee of the Association, and now a law student at the U.N.D. Mr. Buchanan has received permission from his instructor in the course on Legislation to draft one or more statutes, complete with accompanying drafter's notes on the possible difficulties which may arise for physicians who serve on hospital utilization review committees covering questions of physician-patient relationship, privileged communication, liability of physicians serving on committees, etc., as matters of State Law. He was primarily asking for guide-lines from the Council. The letter was discussed further and it was felt he could request help from the Legislative Committee and Dr. Wright offered his guidance inasmuch as Mr. Buchanan is employed on a part-time basis by the North Dakota Regional Medical Program.

A resolution drafted by the House of Delegates was next discussed. The Resolution stated that the Office of the Executive Secretary should obtain the names of the Board of Censors, or Grievance Committee, of each Society. No names of members acting on these Boards, or Committees, have been received. The Councillors and Mr. Limond were asked to encourage the local District Societies to forward these names to the State Office.

Recess—5:45 p.m.

The Council reconvened at a dinner meeting at 7:00 p.m. Following the dinner, Dr. V. J. Fischer, President of the North Dakota State Medical Association, addressed those present. He expressed his gratitude for the courtesies shown him at the District Society meetings, the cooperation of the Council and Officers and the various Committees. He strongly urged firm support of the AMPAC-COMPACT and the necessity of health planning on a local basis.

Dr. Strinden made the motion that the December 1968 Interim Meeting of the Council be held in Bismarck, North Dakota at the Holiday Inn, commencing at 9:00 a.m. Seconded by Dr. Tudor and carried.

Adjournment at 8:40 p.m.

Respectfully submitted,
(Signed) R. E. Mahowald, M.D.,
*Chairman of the Council*

## REPORTS OF COUNCILLORS

### First District

The First District Medical Society held 8 meetings in the last fiscal year, from March 1967 through February 1968. These meetings were all held in the Oak Manor Motor Lodge in Fargo. The first of these meetings was held on March 27, 1967. It was called to order by the president, Dr. William Webster. The guest speaker for the evening was Dr. John A. Spittell, Jr., who talked on thrombophlebitis. He based his remarks on a study of patients with idiopathic, recurrent thrombophlebitis in which he found a high incidence of high levels of hypercoagulability, probably due to increased antihemophilic factor. It was also found that the hypercoagulability occurred in all patients following surgery, and the suggestion that postoperative patients, particularly those with increased risk or thromboembolism should be anticoagulated immediately following surgical procedures or preoperatively.

Following the presentation by Dr. Spittell, the usual business meeting took place, and at this time there was a third reading on the application for membership of Dr. Ghatan. This was read and a unanimous secret ballot was cast. Dr. Wayne LeBien reported that funds for tuition scholarships at the University of North Dakota would be soon transferred to administration of the U.N.D. Medical School.

It was also announced that the next meeting would be held on April 17, 1967, instead of the last Monday of the month. This was to be a business meeting for committee reports and presentation of resolutions which will be discussed and forwarded to the House of Delegates for the May meeting. Announcement of a meeting at the N.D.S.U. Student Union on April 22, on Heredity and Genes was made at this time. Dr. Kana asked for approval of the Driver Training Program sponsored by the Fargo City Police and Woman's Medical Auxiliary. This was passed.

A letter from Mr. D. D. Wightman, Administrator of the Dakota Hospital, regarding affiliation of the Dakota Hospital as a satellite of Hennepin County General Hospital, in the chronic hemodialysis program was read. It was also suggested in the announcement of the April 17th meeting that this also be a meeting for committee reports and presentation and discussion of resolutions. The meeting was then adjourned.

The next regular monthly meeting was held on April 17, 1967, and was called to order by the president, Dr. William Webster. The meeting convened at 8:00 p.m. The minutes of the previous meeting were read and approved. This meeting having been reserved for committee reports and a business meeting, there was no scientific program. In asking for committee reports, Dr. LeBien, speaking for the Scholarship Committee, announced a check for $7,194.24 had been forwarded to the University of North Dakota Medical School, for use as a scholarship fund. A letter from Dr. LeBien to Dr. Harwood was attached. Dr. Webster then called for any resolutions which were to be presented to the House of Delegates for consideration at their meeting in May of 1967. A resolution in regards to patients who are subject to seizures was presented by Dr. Lane. Dr. Pray suggested that the committee which would draw up the resolution in its final form, base its recommendation on those of two men from Johns Hopkins and Harvard University Medical School. After this discussion, the resolution was voted upon and passed. Next, Dr. Olafson spoke on behalf of recommending further education for the prevention of injuries to individuals using two-wheel vehicles. Dr. Pray suggested that our recommendation would include that public schools receive subsidy, including both Driver Training Education in two-wheel as well as four-wheel vehicles. Norman Schroeder presented the renewed charter for the First District Medical Society for the Medical Explorer Post, which it sponsors. There was considerable discussion as to fee schedules as they apply to Crippled Childrens Services and to individuals eligible for care under Title 19. Dr. LeBien suggested that a resolution be made to the effect that fees under Title 19, specifically including Crippled Childrens Services, be the usual and customary fee rather than a pre-set fee schedule. There being no further business, the meeting was adjourned at 9:00 p.m.

Prior to the first fall meeting, there is usually a meeting of the Executive Committee. This was held at 12:15 p.m. on September 27, 1967, at the Oak Manor Motor Lodge. This meeting was attended by Drs. Webster, Fercho, Amidon, Mazur, Schneider, Pray and Norum. At this meeting, some matters involving the interworkings of the District Society were reviewed, suggestions were offered, and corrections were made. Discussion was given as to the election of delegates and Blue Shield directors. It was felt that these offices should be rotated and the terms perhaps limited to two. The concensus was that these appointments should be individualized, and that the nominating committee should, along with the president, submit names for the offices. Members whose dues were not paid in 1967 were reviewed. It was also announced that Dr. G. Arthur Larson would receive a 50-Year award pin at the October 2nd meeting. Considerable discussion was given to doctors who were invited to give talks on radio, television, or appear before service clubs. The consensus was that we should be quite liberal in permitting this, and that the only problem heretofore has been advanced publicity. Speakers have been checking with the Chairman of the Public Relations Committee, and there have been no specific problems to date. The meeting adjourned at 1:30 p.m.

The next regular meeting of the First District Medical Society was held on October 2, 1967, at the usual meeting place, the Oak Manor Motor Lodge. The meeting was called to order by the president, Dr. William Webster, at 8:00 p.m. Dr. V. J. Fischer, President of the North Dakota State Medical Association, described the activities of the AMA on our behalf, and stated that our national image depended upon these activities. He urged our interest in AMPAC and COMPACT, and stated that this is our best opportunity to work effectively in local, regional, and national politics. He presented a 50-Year award to Dr. G. Arthur Larson, who responded with brief remarks.

Next on the program, Dr. Perry Triggs of Fargo introduced Dr. William S. Middleton. Following this, the application of Dr. S. F. Everett was read for the first time. Dr. Webster called for committee reports. Dr. Ulmer reported for the House of Delegates, reviewing the actions that were taken at the May 1967 meeting. Dr. Norum reported for Blue Shield, stating that the addition of lay persons to the Blue Shield Board of Directors was under consideration. He also stated that the composite profile of fees submitted by North Dakota physicians has been reviewed and been moved upward to offset the cost of living increase. Next, Dr. Christu reported for the Public Health Committee and stated that emphasis this year will be on VD control in teenagers. The program was endorsed by Dr. Fischer and assistance will be offered by the Woman's Medical Auxiliary. It was moved and seconded that the Society members endorse and support such an endeavor. Dr. Donald Lawrence alerted the members of the First District to the fact that home nursing service was available to Medicare patients. Dr. Burt reported for the Medical Economics Committee. He reported that the House of Delegates was strongly urged to see that every effort be made to introduce usual and customary fees under Title 19, Crippled Childrens Services, etc. He stated that the State Medical Economics Committee had not met since last spring. Dr. Fischer reported that he had recently read a report which proposed a complete federal control of medical services.

Dr. Fercho reported for the Public Relations Committee and brought up the subject of Society members appearing before outside groups and speaking on medical subjects. Motions were made, seconded, but not passed that all restrictions be eliminated, and some motions to table it were withdrawn, some passed. At this meeting the minutes of the recent Executive Committee meeting were reviewed. Dr. Ulmer reported for the Regional Program stating that it was necessary that local physicians be kept informed as to their activities. He stated Dr. Christoferson was chairman of this committee. There being no further business, the meeting was adjourned at 9:30 p.m.

The next regular monthly meeting was held on October 30, 1967, at the Oak Manor Motor Lodge. It was called to order by the president, Dr. William Webster, at 7:45 p.m. Dr. K. R. Trueman, general surgeon with the Winnipeg Clinic, Winnipeg, Manitoba, spoke on the subject of "Government in Medicine in Canada". He reviewed the historical aspects of government interference in medicine, drawing some comparisons with the National Health Service in Great Britain. He also drew some comparisons with the development in this country. A number of questions were asked of Dr. Trueman, and a discussion ensued. Following this, the minutes of the October 2nd meeting were read. The applications of Drs. David J. Perry and Antonio R. Rillo were read for the first time. The application of Dr. S. F. Everett was read for the second time. Following this, Dr. Kulland announced that the AAGP would be meeting in Bismarck on November 17th and 18th, and that an interesting and worthwhile program was planned. Two guests were introduced, Drs. Willard Wright and Joe Craven, both of Williston. Dr. Wright had been named Director of the Regional Medical Care program for the State of North Dakota. Dr. Webster then read a letter from Mr. Ed Clapp, Executive Director of the Fargo-Moorhead Medical Foundation, requesting the Society's opinion on building a second medical school in Minnesota, located at Moorhead. It was the consensus of those present, that for several reasons this was not feasible, including the lack of clinical material, and the lack of available full-time staff. The meeting was adjourned at 9:00 p.m.

The next regular meeting of the First District Medical Society was held on November 27, 1967, and was called to order by the President, Dr. Webster, at 8:00 p.m. Dr. Henry T. Smith, Associate Director of Chronic Hemodialysis Program at the Hennepin County General Hospital, was the invited guest speaker. He gave a very interesting talk on problems that have been encountered with hemodialysis and with the establishment of their satellite program. Following the scientific program, the minutes of the previous meeting were read and approved. The applications of Drs. Eric Barth and Eusebio Mendoza were read for the first time. The applications of Drs. David Perry and Antonio Rillo were read for the second time. The application of Dr. S. Fred Everett was read for the third time. On written ballot he was unanimously elected to membership. Following this, Dr. J. F. Houghton announced that the North Dakota Heart Association was establishing a program for the first of the year, in the schools, for heart scanning using a phonocardiogram. He asked for the cooperation of the medical profession with this program. It was moved by Dr. Story and seconded that our approval be given and motion passed. Dr. Webster, the president, then announced that he had received a letter from the Regional Medical Program of Minnesota asking that they be allowed to circulate a questionnaire to our members. The questionnaire would be mailed out in the future, and he asked that our cooperation would be given in answer to the questions submitted. No further business and the meeting adjourned at 9:15 p.m.

The December meeting of the First District Medical Society was held on the 18th, called to order by the President, Dr. Wm. Webster, at 8:00 p.m. The minutes of the previous meeting were read and approved. At this meeting there usually is not any scientific program. The applications of Drs. Eric Barth and Eusebio Mendoza were read for the second time. The applications of Drs. David Perry and Antonio Rillo were read for the third time. The applications of Drs. Perry and Rillo were voted upon by written ballot and both were unanimously elected to membership.

Dr. DeCesare announced that the North Dakota State Association dues were going to be increased in 1968 to $125.00. He explained the reasons for this increase. As of January 1st, the dues would not amount to $125.00 per year. It was moved and seconded that this report be accepted. Dr. Webster then read the report of the nominating committee, which presented the following slate of officers: for President, Dr. Calvin Fercho; Vice-President, Dr. Marshall Landa; Secretary, Dr. Maynard Gustafson;

Treasurer, Dr. George Thompson. Then it was moved and seconded the nominations be closed and that a unanimous ballot be cast. This was passed. Dr. DeCesare then announced that at the December 1967 Council meeting, representatives of the State Bar Association spoke in favor of establishing liaison between the Medical Association and the Bar Association, similar to a New Jersey plan, which would establish lines of communication to avoid bringing malpractice suits into court. This would be studied and finally voted upon by the House of Delegates in May of 1968. Dr. Webster announced that he had received a letter which stated that local attorneys would like to meet with representatives of the First District Medical Society to discuss this proposal. He suggested that the new officers arrange to do so. There being no further business, the meeting adjourned at 9:00 p.m.

The first meeting of 1968 was held on January 29th. It was called to order by the President, Dr. Calvin Fercho, at 7:50 p.m. The minutes of the previous meeting were read and approved. The applications of Drs. Eric Barth and Eusebio Mendoza were read for the third time. The voting was done on written ballot and both doctors were unanimously elected to membership in the Society. Dr. Fercho then called for the committee report. The third treasurer's report was read and approved by the Society.

Dr. Webster moved that the Executive Committee be authorized to purchase the necessary projector equipment and screens, to avoid problems of obtaining this equipment for the meeting. This motion was seconded by Dr. Gillam and passed. Dr. Henry Norum then gave the Blue Shield report, commenting on the allowances, with reference to minor surgery cases in the doctor's office and discussed revision of plans and the coverages. He reported that the welfare board was arranging with Blue Shield for coverage of Medicare and was also negotiating for coverage of welfare cases for Title 19. He advised that the Board of Directors of Blue Shield had requested that names of lay personnel who were willing to serve and who would be good candidates for appointment to the Board of Directors of Blue Shield, should be forwarded by this Society to the Executive Secretary prior to the annual meeting.

Dr. Robert Ulmer discussed the progress and the present state of the North Dakota Regional Medical Program and reported that at the present time the workshop of the North Dakota Regional Program was functioning and Dr. Willard Wright of Williston had been appointed as medical director for the program. He reported that despite financial cutback and reduction of budgetary funds, the program would continue to function and he requested that if any members of this Society had suggestions for operational development plans to submit them to the Medical Director of the North Dakota Regional Medical Program.

Dr. Lee Christoferson advised that any operational plans would have to be approved by the House of Delegates before any action could be taken.

Dr. Fercho advised the members that the Society had failed to complete the election of members to the Board of Censors and the House of Delegates in December. The floor recommended the following: Dr. Hall be appointed to the Board of Censors and recommended the following members for the House of Delegates: Drs. John Goff, Marlin H. Poindexter, A. C. Burt, Roy Kulland, Paul Beithon, B. F. Amidon, R. J. Ulmer and David Jaehning; and as alternates the following: Drs. John S. Gillam, Wayne LeBien, Robert Gaebe, Calvin Fercho, E. R. Wasemiller, James Houghton, Neil Williams, P. Engstrom. There were no other nominations for these offices from the floor. It was recommended that the above members be elected and this motion was passed. Dr. Bernard Mazur then discussed the present status of the Poison Control Center. He stated that since it had been established there had been on an average of 2 to 3 calls per year for information from the center. He felt, and recommended, in view of this situation and the fact that there is now available an information center through the Pharmacology Department of the North Dakota State University, under the head of toxicology, this facility could arrange for broader coverage over a larger area with a 24-hour coverage available. He therefore recommended and moved that the Poison Control Center be abolished in favor of the Poison Control Center at the North Dakota State University. This motion was seconded by Dr. Pray and was passed. For the scientific program, Dr. James C. Haworth, Associate Professor of Pediatrics, University of Manitoba, was the speaker. He discussed the various screening procedures which are now available, and are in the process of development for evaluation and recognition of metabolic diseases of the newborn. Dr. Fercho asked for volunteers to assist in the presentation of the venereal disease program for the 8th graders at the Agassiz Junior High School, and several members volunteered their services. The meeting was adjourned at 9:45 p.m.

The last meeting of the First District Medical Society to be held during this fiscal year was held on February 26, 1968, at the Oak Manor Motor Lodge. It was called to order by the President, Dr. Calvin Fercho. The first speaker to be introduced was Dr. Willard Wright, the Regional Medical Director of the Heart, Cancer, Stroke Program for the State of North Dakota. He spoke briefly and explained to the members of the Society that this program was sponsored by the North Dakota State Medical Association, that a grant had been applied for and obtained as of July 1967 to the amount of $188,010.00. Dr. T. H. Harwood, Dean of the North Dakota Medical School had been appointed as coordinator. Dr. Wright, as the program director, summarized by saying that the goal of this program was the highest type of medical care for the patients of this area. Following Dr. Wright's short talk, Dr. Paul Beithon introduced the next speaker, Dr. John Lefsrud. Dr. Lefsrud is a psychiatrist and medical director of the Southeast Regional Mental Health and Retardation Services Center, based at Fargo, North Dakota. Dr. Lefsrud went into detail, describing the operations of this Community Mental Health Center, the type of patient that could be handled on an outpatient basis and in cooperation with the private psychiatrists in private hospitals on a part-time basis. He described the need for this type of center, because of the lack of funds for many patients in need of care. He introduced his Chief Social Director, Mr. Norman Lunde, who spoke briefly on the mechanics of this Mental Health Center, and also Dr. Pink, psychologist, also associated with this unit. Following Dr. Lefsrud's presentation, Dr. Perry Engstrom from Wahpeton, North Dakota gave a follow-up report on medical practice in Viet Nam. Some time ago Dr. Engstrom talked to the Society about the 60 days he spent in Viet Nam doing surgery in a civilian hospital. He now followed this up by telling of his personal experiences with 60 more days spent there, also in the same type of hospital. He gave much of the background, the type of surgery, and the type of care, the type of facilities that were available and being used. He advocated this as a wonderful, good-spirited thing to do, and a tremendous amount of experience available to men who would be willing to give up 60 days from their busy practice.

Following the speakers, the minutes of the last meeting held in January were read and approved. There was then the first reading for two proposed new members, Drs. John Lefsrud and P. A. Colliton. There were no committee reports at this time. Again the President urged the members of the Society to submit names of lay people of stature in the community who would be willing to serve as possible members of the Board of Directors of Blue Shield for North Dakota. These names were to be submitted to the secretary and they would be considered with other names at the time of the annual meeting of the North Dakota Physician's Service Corporate Membership meeting to be held in Minot, in conjunction with the State Medical Association meeting. There being no new business other than this, the meeting adjourned at 9:45 p.m.

Respectfully submitted,
(Signed) F. A. DeCesare, M.D., *Councillor,*
First District

## Second District

The regular meetings were held during the season with the winter meetings being held at Andrew's Steak House at Rugby, and the other meetings being held at the Ranch at Devils Lake, with one meeting being held at the Anchor Inn at Lake Metigoshe, Bottineau.

Officers for the year 1968 were elected and are as follows: Dr. E. V. Gilbertson, President; Dr. A. J. Overland, Vice-President; Dr. L. F. Pine, Secretary-Treasurer.

Delegates: Dr. G. H. Hilts, Dr. R. D. McBane, Dr. C. R. Miller.

Alternate Delegates: Dr. J. W. Lind, Dr. S. J. Cook, Dr. A. R. Neuenschwander.

Censors: Dr. D. G. McIntyre, Dr. Jerry Terlecki, Dr. John Sawchuk.

Blue Shield Corporate Members: Dr. L. F. Pine, Dr. K. W. Kihle.

Councillor: Dr. W. R. Fox.

At the meeting of March 2, 1967 at Andrew's Steak House, Dr. Buckingham gave the report from the legislative committee and mentioned the osteopathic law which would come up again in two years and that some thought should be given as to whether this should be accepted or not.

Discussion followed regarding the abortion law and also discussion regarding the measles clinics to be held in the near future.

Dr. George Hilts reported on his Chicago meeting of Religion and Medicine.

April 27, 1967 at Andrew's Steak House. Election of the Councillor took place with the re-election of Dr. Fox.

Discussion followed concerning the insurance problems in the State of North Dakota and the coming annual North Dakota Medical Association meeting.

May 11, 1967 at Lake Metigoshe, Bottineau. Medical students serving clerkships in our surrounding hospitals were guests of the Society.

The delegates gave their reports following the State Medical Meeting.

Discussion was held regarding the Crippled Childrens program and the Title XIX and the role that general practitioners would play in this new program.

Dr. Fox then gave the Councillor's report and this was followed by Dr. Kihle giving a report on the Blue Shield Corporation and Directors' meeting. This was discussed at some length and he recommended that two members from each Society be appointed to this Board.

September 7, 1967 at the Ranch. A motion was made that our Society request that we have two members present on the Blue Shield Board when it is reorganized.

Dr. Miller from Fort Totten, the new Public Health Officer, was introduced.

Dr. Fox read resolutions that have been passed in the last House of Delegates meeting regarding the March 15 deadline for our resolutions to be placed in the copy of the Handbook and that ⅔ majority vote of the House of Delegates would be required for any Resolution not brought up by March 15.

Also, the procedure was discussed for arbitrating differences pertaining to fees between patients and physicians and especially between third party carriers and physicians. The Council should act as a mediating committee after going through local channels.

Dr. Walker was introduced as a new certified radiologist for the Devils Lake Hospital.

Program speaker for the day was Dr. Joseph Tobin, Northwest Psychiatric Clinic and his topic was "Recognition and Management of Depression Today."

October 5, 1967 at the Ranch. The Speaker was Dr. Charles Walker and his topic was "Roentgenography of the Biliary System" and an interesting program was presented.

There not being a quorum, no business meeting was held.

November 2, 1967 at the Ranch. Speaker for the evening was Dr. Roger Fricke and his topic was "Practical Aspects of Diagnosis and Treatment of Hypertension."

Following this, dinner was held and the business meeting followed. Dr. Charles Walker was approved by the censors and the nomination approved.

The Society then went on record as adopting a resolution in which they approved the increase of North Dakota Physicians Service Board of Directors from 30 to 37 and that the new members be lay people. This would leave the present Board as is, but add about 20% to make the total 37. Motion passed.

December 7, 1967 at the Ranch. Speakers for the evening were Mr. John Harkness, Clinical Director and Mr. Bernard Larson from Heartview Hospital at Mandan. The men presented an interesting view of Heartview Hospital and some of the aspects of alcoholism.

The Society voted to approve any action which the Councillor thought was desirable in reference to any change in the Association dues to be discussed at the Interim Meeting of the Council.

Dr. Hilts initiated discussion in reference to having the North Dakota Academy of General Practice meet in Devils Lake in 1969.

January 4, 1968 at Andrew's Steak House. Speaker for the evening was our State President, Dr. V. J. Fischer, who gave a very interesting talk regarding the need for local physicians to take a greater part in community activities and in the affairs of the State and National Medical Associations.

Due to the inclement weather, the attendance was poor and no business meeting was conducted.

February 2, 1968 at Andrew's Steak House.

Speaker for the evening was Dr. Jack Leigh speaking on "Cardiovascular Problems and Peripheral Vascular Disease."

A very interesting program was presented and was enjoyed by everyone.

The election of officers was held during the business meeting and these have been listed previously.

March 7, 1968 at Andrew's Steak House. Speaker for the evening was Dr. Victor Kaljot, Minot, speaking on the topic "Intensive Coronary Care Units and Coronary Care."

A business meeting followed: Two resolutions were made and passed by the Society. They are as follows:

1. Be it resolved that a re-evaluation of the marriage certificate and marriage laws regarding medical examinations and fees be carried out. Since the present law requires that an examination be made of the applicants and the certification that they are free of epilepsy, tuberculosis and syphilis for the fee of $2.00 and since it is impossible to make an adequate examination and truthfully be able to certify to these facts, it is requested that a study be made and new forms and new requirements be determined. It is suggested that the Canadian Law be used as a pattern.

2. Be it resolved, that some uniform determination be made as to the proper weight class in which each boy should participate in wrestling. Since, at the present time, there is a tendency for coaches to enter boys in a weight class lighter than their normal wrestling weight, and since this may be detrimental to the health of the boy, it is recommended that some uniform statewide determination be made, by the medical profession to determine the proper weight class for the boy to wrestle in. This proper weight should be recommended by the examining physician. It is recommended that the AMA study regarding the proper method of determining the proper weight class be used as a guide.

Respectfully submitted,
(Signed) W. R. Fox, M.D., *Councillor,*
Second District

### Third District

The regular monthly meeting of the Third District Medical Society was held on April 20, 1967 at the Grand Forks Country Club. Joseph M. Kiely, M.D. of the Mayo Clinic presented a paper entitled "Clues to the Diagnosis of Malignant Disease", which was enthusiastically received.

President, Dr. Tarpley, notified the membership that the University Book Store would be willing to stock or order medical books as requested by members of the Society.

The Councillor, Dr. Mahowald, reported that he expected nothing controversial at the forthcoming annual meeting of the North Dakota State Medical Association except the possible early implementation of the Cancer-Heart-Stroke Regional program.

The meeting was then adjourned.

The next regular meeting of the Third District Medical Society was held on May 18, 1967 at the Ryan Hotel. The minutes of the previous meeting were read and approved.

A letter was presented by the Secretary from Doctor G. G. Thorgrimsen expressing his appreciation for the plaque prepared in his honor on retirement from practice.

A communication from the Superintendent of Schools, Edwin Cramer, was presented, inviting the President of the Society to attend a meeting on May 23, 1967 concerning the Grand Forks School Board policy regarding the health of students.

The next item was a presentation by Dr. Ronald Barnes, Vice-President in charge of Student Affairs, of the University of North Dakota in which he asked that a committee be appointed by our District Society to meet with Dean Barnes regarding problems in the Student Health Service at the University. This was made in the form of a motion, seconded, and approved with the President empowered to appoint said committee.

The Councillor's report was given by Ralph E. Mahowald, M.D., who stated an increase in dues for the next year was considered and is awaiting the interim council meeting in December. He also stated it is time for us to be considering a new candidate for Councillor from our District and that our present Councillor's term expires next year.

Information on Grievance Committees was also discussed, as well as the A.M.A. disability insurance plan.

Doctor Countryman gave the report on the Blue Shield meeting and stated consideration of lay representation on the Blue Shield Board was a very important fact. The psychiatrists' participation in Blue Shield was discussed at great length. He also reported that Doctor Powers from the Third District had been elected Treasurer of the Blue Shield Board of Directors.

Dr. Alice Peterson, Director of Maternal and Child Welfare of the North Dakota State Health Department, was next introduced. She gave a very interesting discussion on the value of sex education in our schools. There was considerable discussion following her presentation and it was moved and seconded that $1,000.00 (One Thousand Dollars) be allocated from our Third District Society funds in order to get such a program of study instituted within our school system.

The meeting adjourned at approximately 9:45 p.m.

The Third District Medical Society next met at the Ryan Hotel on October 19, 1967, at 6:30 p.m. The minutes of the last meeting were not read at this time, nor was the Treasurer's reported, since both the Secretary and Treasurer were absent.

The guests were introduced. The President of the State Medical Association, Dr. V. J. Fischer, was present and spoke briefly on the program for the coming year of the State Association. The program was presented by Doctor Franklin Sims of the Mayo Clinic Foundation who spoke on "Sports Medicine". Following the presentation of the program, discussion was held.

Committee reports were then presented. A brief report on the Education for Living Program was presented by Doctor H. I. Tarpley. Doctor Painter presented the City Planning Program and the program of the Heart-Cancer-Stroke Society. Doctor Harwood presented a report of the Governor's Committee for Heart-Cancer-Stroke. Doctor Countryman presented a report of the Blue Shield Committee concerning the advisability of lay representation on the Blue Shield Board. Doctor Hill moved, Doctor Vandergon seconded the motion, that our Society go on record as opposing lay membership of this Board.

The Executive Committee presented the name of Doctor Hector Gallego for membership in our Society. Doctor Powers moved, Doctor Evans seconded, that he be accepted as a member of our Society. This was passed unanimously.

Doctor Evans asked permission for the local Heart-Cancer-Stroke Society to send out post cards to formerly hospitalized patients to find out what happened to them following discharge from the hospital. A discussion followed. Doctor Barcome moved, Doctor McLeod seconded, that the Society authorize this permission. The motion passed unanimously.

Doctor Barcome moved, Doctor Evans seconded, that the President send a letter to the Student Medical Society at the University of North Dakota congratulating them on their recent Heart Program. This motion passed unanimously.

Doctor Barcome moved and Doctor Evans seconded that the meeting be adjourned.

The Third District Medical Society met at the Ryan Hotel on November 16, 1967. The meeting was called to order by Dr. Harold I. Tarpley, President, at 8:40 p.m. Doctor Robert C. Warner introduced Doctor John Joyce of the Mayo Clinic who gave an excellent talk on "Vasculitis."

The minutes of the October 19th meeting were read and approved.

Guests were introduced including Doctor Willard A. Wright, who is the Director of the Regional Medical Program for Heart, Cancer and Stroke. He presented the present position of the Program and how it was to be implemented.

A letter was read from Oscar E. Manz, Science Fair Director, requesting $100.00. It was moved by Doctor Mahowald, seconded by Doctor William C. Nelson, that the Society donate $100.00 to the Science Fair. Motion carried.

Doctor Russell H. Wilson gave a report on the recent cancer program at the University of North Dakota. He recommended that the president appoint a committee to help with the scientific program for next year.

It was moved by Doctor McLeod, seconded by Doctor Evans, that the Third District Medical Society extend an invitation to the physicians in the adjacent Minnesota area to attend our future scientific programs. Motion carried. An amendment to that motion was proposed by Doctor Clayburgh that a joint meeting between the officers of the Third District Medical Society and the Red River Valley Medical Society be held. This motion carried.

The meeting was adjourned at 9:45 p.m.

No meeting of the Third District Medical Society was held in December, by notification of the President.

The next regular meeting of the Third District Medical Society was held at the Ryan Hotel on January 18, 1968. The meeting was called to order at 8:15 p.m. by Dr. Thomas L. Schafer in the absence of the President, Dr. Tarpley, and the Vice-President, Dr. Kaluzniak. However, on mutual agreement, the meeting was turned over to the President-Elect, Dr. William C. Nelson, who was the presiding officer.

Dr. Pansegrau introduced Dr. Edward Green of the University of Iowa who spoke on his experiences in Vietnam while serving with the volunteer physicians for Vietnam. This was an excellent presentation.

On a motion by Dr. Helenbolt, seconded by Dr. Barcome, the reading of the minutes was dispensed with. Motion approved.

The report of the Nominating Committee follows. This committee consisted of Dr. William C. Nelson, Chairman; members Drs. Hill, Barcome, and Helenbolt.

President, William C. Nelson, M.D.; President-Elect, John J. McLeod, Jr., M.D.; Vice-President, Nicholas J. Kaluzniak, M.D.; Secretary-Treasurer, Thomas L. Schafer, M.D.

Dr. Powers moved that the nominations cease and the secretary be instructed to cast a unanimous ballot for the above-named slate. The motion was seconded by Dr. Helm. The motion passed.

The Delegates and Alternate Delegates to the North Dakota State Medical Association are as follows:

Delegates: John A. Sandmeyer, M.D., George L. Countryman, M.D., Richard H. Leigh, M.D., Harold W. Evans, M.D., William T. Powers, M.D.

Alternate Delegates: Wallace W. Nelson, M.D., William P. Teevens, M.D., B. J. Clayburgh, M.D., Thomas L. Schafer, M.D., Norman M. Helgason, M.D.

Dr. Helenbolt moved, Dr. Barcome seconded, that the slate be approved. Motion carried.

Dr. R. E. Leigh was nominated for the three year term on the Board of Censors. His nomination was approved on a motion by Dr. DeLano, seconded by Dr. McLeod. Motion carried.

Blue Shield Corporation members consist of the following:

B. J. Clayburgh, M.D., Robert H. DeLano, M.D., Harold W. Evans, M.D., Kenneth S. Helenbolt, M.D., Norman M. Helgason, M.D., Frank A. Hill, M.D., Richard H. Leigh, M.D., William C. Nelson, M.D., Robert C. Painter, M.D., William T. Powers, M.D., John A. Sandmeyer, M.D., William P. Teevens, M.D., Keith G. Vandergon, M.D., George A. Wilson, M.D.

Our nomination for the Board of Directors of Blue Shield is Dr. George A. Wilson. It was moved by Dr. Helenbolt and seconded by Dr. Schafer, that the above slate be approved. Motion carried.

Nomination for Councillor for the North Dakota State Medical Association from our District was Dr. John A. Sandmeyer. His nomination was approved on a motion by Dr. Helenbolt, seconded by Dr. Countryman. Motion carried.

As regards to nominations of lay members for the Board of Directors, after discussion it was decided to nominate Mr. Paul Bridston, Al Holmquist, and Chuck Goodman. These men were not contacted because we felt as though this was a poor way to handle the nominations for this position.

It was moved by Dr. DeLano, seconded by Dr. McLeod, that the Secretary be instructed to obtain a Post Office Box as a permanent mailing address for the Society. Motion carried.

The meeting adjourned at 9:35 p.m.

The Third District Medical Society met on February 15, 1968 commencing at 7:30 p.m. in the Nodak Room of the Ryan Hotel. The meeting was opened by the President, Doctor W. C. Nelson, who called upon Doctor Mahowald to introduce Doctor Rudolph of the Grand Forks Air Base who, in turn, introduced the other Air Force Staff Physicians. The meeting was then turned over to Doctor Pansegrau, Program Chairman, who introduced Robert A. Kyle, M.D. of the Mayo Clinic, who spoke on Multiple Myloma and the Dysproteinemias. Following Doctor Kyle's talk the president called upon Doctor Tarpley who announced that the School Board had received a report from the Community Research Committee recommending that the School Board institute sex education in the school. Doctor Tarpley announced that the School Board had instructed the school system to include sex instruction in the school. The meeting adjourned at 9:45 p.m.

The next regular meeting of the Third District Medical Society was held at the Ryan Hotel on March 21, 1968. The meeting was called to order at 8:15 p.m. following a social hour and dinner, by the President, Dr. William C. Nelson.

Dr. Pansegrau introduced our speaker, Dr. DeRemee, who spoke on "Unusual Pneumonias—Alveolar Capillary Block Syndrome." Dr. DeRemee is a consultant at the Mayo Clinic.

Guests were introduced—Dr. Wikoff from Crookston and the physicians from the Grand Forks Air Force Base Hospital.

At the direction of the President, the minutes were dispensed with.

Mr. Vern Schanilec and Mr. Ray Pratt represented the pharmacists and presented to the Society the question of refills and welfare prescriptions. The matter was discussed, and Doctor Sandmeyer requested the chairman to look into the matter concerning a joint committee to further study this question.

The Treasurer's report was then given by the Secretary-Treasurer, and no action was needed at the present time.

Dr. W. W. Nelson moved and Dr. Goodwin seconded that we invite the second-year medical students to our April meeting as our guests. That meeting will be held on April 18, 1968.

The meeting was adjourned at 9:30 p.m.

Respectfully submitted,
(Signed) RALPH E. MAHOWALD, M.D., *Chairman*
Third District

### Fourth District

The following is a report for the Northwest District Medical Society (Fourth District) for the fiscal year beginning March, 1967, through February, 1968.

The Northwest District Medical Society held eight meetings during our fiscal year beginning March 1967 and ending in February 1968. Attendance and active participation in Northwest District affairs was considerably improved over the preceding year. As of March 1, 1968 we have 58 regular members. There were five new members admitted during the past year. They are as follows: 1) Dr. Liu, Minot; 2) Dr. Bergman, Minot; 3) Dr. Verzosa, Mohall; 4) Dr. Gokavi, Mohall; 5) Dr. Rauh, Minot.

At this time there is also an application pending for the membership of Dr. Rosalie Kryston; Dr. Bernadette Uy Libi and Dr. Dionisio Libi, all of Minot. We have two limited members, namely Dr. Peterson who is serving a residency and also Dr. Vandersteen, serving a residency. We have four Honorary members, these being Dr. A. R. Sorenson, Dr. A. L. Cameron, Dr. Paul Rowe, and Dr. Max Lampert.

The officers elected for the 1967-1968 year were:

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| President | DR. LLOYD GILTNER |
| Vice-President | DR. BURTON OLSON |
| Secretary-Treasurer | DR. B. JAYAPATHY |

Our first meeting of the new fiscal year was held on March 23, 1967 at the Clarence Parker Hotel. At this time, Dr. Larson made a progress report as Chairman of the Nursing Education Committee of the District Society, stating that his committee had met with the officials of Minot State College and both hospitals in Minot and felt that progress was being made toward the establishment of a four year degree program in nursing at Minot State College. A specific curriculum was presented and one that offered a number of choices and options to a girl after one year of college. These being namely that she could continue toward her degree nursing program or she may transfer to a three year program of nurses training offering a diploma in nursing or she may enroll in a course for laboratory technicians. The scientific program was presented by Dr. Victor Kaljot on "Diagnostic Problems in Cardio-pulmonary Diseases". A most interesting presentation was given and a lengthy discussion followed. Our next meeting was held on April 20th at the Clarence Parker Hotel. The meeting was called to order by our President, Dr. Lloyd Giltner. A long discussion was held concerning the proposed degree nursing program from Minot State College. An excellent presentation on "New Concepts in Central Venous Pressure Monitoring" was given by Dr. Grandon Tolstedt from the Quain and Ramstad Clinic in Bismarck. Our next meeting was held on May 25th at the Ramada Inn. A lengthy discussion was held concerning the Mental Health Center located in Minot. Dr. W. B. Huntley and Dr. B. Huss were appointed by the District Society as representatives to the Mental Health Center Board. No formal scientific program was held. In its place, Dr. Larson gave a report of the business of the Council at the State Medical Meeting. Dr. A. M. Cameron and Dr. G. Richardson gave a summary of the action of the House of Delegates and Dr. Huntley gave a summary of the year's activities of the Blue Shield Board of Directors.

There were no meetings held in June, July or August. Our next meeting was held on September 28th at the Ramada Inn. At this meeting, Dr. B. Rioux gave a report on the meetings of the Mental Health Board. Both he and Dr. Huss expressed concern that the Mental Health Center would be run as state officials wanted them to be run with little or no control or guidance from physicians. At this meeting we were privileged to become acquainted with the new Commander of the Air Force Hospital, Col. Charles Ford. Considerable discussion was held at this meeting concerning the profile of physicians' fees in relation to both Medicare and Blue Shield. Dr. Larson also reported on certain procedure changes adopted by the Blue Shield Board of Directors including the payment for spinal taps, cystoscopy and proctoscopy being allowed in addition to daily visits. At this meeting, he also recommended the abolishment of the Series 80 Blue Shield contract and requested the feeling of the District Medical Society in this regard. There was a unanimous feeling that a single Series 100 contract should be offered and adopted, if feasible. The scientific program was presented by Dr. Michael Stump, Pathologist at Minot, who talked about the techniques of determining blood volume and also by Dr. Cecil Ram, Urologist, who talked of the clinical value and uses of blood volume determinations. Our next meeting was called to order by our President Dr. Giltner, on October 26, 1967, at the Ramada Inn. Present for this meeting were Mr. Lyle Limond, our Executive Secretary and Mr. Vernon Wagner and Mr. W. David Coyner, a representative of the Field Services Division of the American Medical Association. At this meeting a minute of silent prayer was observed in memory of Dr. Samuel Shea, our beloved colleague, who passed away suddenly and unexpectedly. His presence will be missed dearly by members of our District Society as well as our fellow colleagues in Williston with whom he worked closely. At this meeting, we were privileged to receive the address of the current President of the North Dakota Medical Association, Dr. V. J. Fischer. Dr. Fischer talked about the importance of belonging to the American Medical Association and his fine dissertation was well received by all. At the close of his address, Dr. Fischer asked Dr. Huntley to say a few words regarding the proposed lay members on the Blue Shield Board of Directors. Dr. Huntley stated that he was against the idea of bringing laymen onto the Board of Directors but felt that it was inevitable and urgently needed at this time since if we did not voluntarily do so, he felt that the State Legislature may intervene and compel Blue Shield to accept lay members on its Board of Directors. Mr. Wagner, assistant to Mr. Limond, and a member of our State Legislature, was then asked how he felt about this matter and he stated that he did not feel that there was any pressure in the Legislature to compel Blue Shield to include lay members on its Board. Considerable discussion followed. A motion was ultimately made that our Society go on record as being in favor of continuing the Blue Shield Board as it is presently constituted with no change whatsoever. This motion passed unanimously. On November 30, 1967, a meeting of the Northwest District Medical Society was held at the Ramada Inn. The meeting was called to order by our President, Doctor Giltner. The nominating committee consisting of the immediate past three Presidents of the Northwest District Medical Society, namely Drs. G. Richardson, W. Hurly and R. Larson, then presented a slate of nominations for the various elective offices in the Society. Dr. Larson, as Chairman of this Committee, presented the slate of nominees and the following were elected:

1) Dr. Huntley was re-elected to the Blue Shield Board of Directors.

2) Twelve members were nominated to the Blue Shield Corporation, namely: Dr. K. Amstutz, Dr. J. Boyle, Dr. B. E. Briggs, Dr. K. Leonard, Dr. V. J. Fischer, Dr. R. Gammell, Dr. A. Faulconbridge, Dr. W. Huntley, Dr. H. Kermott, Dr. D. Flickinger, Dr. F. Naegeli, Dr. D. Halliday.

3) Delegates to the State Medical Association: Gale Richardson, M.D., Lloyd Giltner, M.D., A. M. Cameron, M.D., B. Jayapathy, M.D.

The following alternates were elected in the order named: W. B. Huntley, M.D., J. Boyle, M.D., S. Keck, M.D., H. Kermott, M.D.

4) The following physicans were elected as officers of the Fourth District Medical Society for the 1968-1969 year:

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|---|---|
| President | DR. G. H. HEIDORN |
| Vice-President | DR. B. JAYAPATHY |
| Secretary-Treasurer | DR. B. HUSS |

The scientific program for the evening was presented by Dr. D. L. Miller of the University of North Dakota at Grand Forks, Department of Physical Medicine, who gave a talk on "The Continuity of Medical Care." He spoke eloquently of the problems of the physically handicapped and the trends in rehabilitation of the handicapped. His presentation was well received. The next meeting of the district medical society was held on January 25, 1968 at the Ramada Inn. The meeting was called to order by our new president, Dr. G. H. Heidorn. Considerable discussion was held concerning the forthcoming North Dakota State Medical Association meeting to be held in Minot. Committee chairmen made reports to the Society. Dr. Willard Wright honored us with his presence at this meeting and spoke briefly on area-wide planning for heart, cancer and stroke. Dr. Jayapathy submitted a report of the medical economics committee of the State Medical Society, informing us of the adopted proposals at their recent meeting. Dr. Michael Stump reported to the Society that Trinity Hospital was anticipating the inauguration of helicopter emergency service by April 1, 1968.

Our final meeting of the fiscal year was held on February 15, 1968 at the Minot Country Club. Our speaker of the evening was Dr. Ron Archer who spoke on speech pathology, mentally retarded and education of the deaf. Dr. Lunday, coordinator of speech pathology, gave a short discussion of their services. Considerable discussion concerning the new birth certificates adopted by the State Health Department was the next item of business. It was felt by many members present that these new forms were an invitation to legal litigation and a motion was made that a resolution be presented to the House of Delegates for rejection of the present birth certificates on the basis of self-incrimination specifically Items 23 and 14c. This motion was passed unanimously. A resolution was presented to the District Society by Dr. B. Briggs concerning osteopathic physician licensure in North Dakota. The District Society again went on record as favoring a joint licensure between osteopaths and physicians and directed our representatives to the House of Delegates to again bring this matter up at the State Meeting in 1968.

It has been my pleasure to serve as Councillor of the Fourth District Medical Society and I would like to thank all of the members of this Society for their continuous support and labors in behalf of our Society this past year. I would also like to congratulate Dr. Giltner for doing a splendid job as President this past year and to welcome Dr. G. H. Heidorn, whom I am certain will carry out the activities of our District Society most ably. Finally, we would like to welcome all of our brother physicians in the State of North Dakota to the 1968 State Medical Convention to be held in Minot.

Respectfully submitted,
(Signed) Richard S. Larson, M.D., *Councillor,*
Fourth District

### PROPOSAL

To: Speaker and Members of the 1968 House of Delegates of The North Dakota State Medical Association

Gentlemen:

I hereby propose that the North Dakota State Medical Association publish a monthly periodical entitled *North Dakota Medicine.*

*North Dakota Medicine* would be a continuing report of all aspects relating to the medical care of the more than 600,000 people of North Dakota by the more than 500 physicians of North Dakota including the more than 120,000 yearly hospital admissions in the more than 50 acute care hospitals in North Dakota.

*North Dakota Medicine* might be formulated as follows: 1. North Dakota Medical Calendar, 2. Letters to the Editor, 3. Editorial Page, 4. North Dakota Medical Articles and Abstracts, 5. North Dakota Medical Case Reports, 6. North Dakota Medical News, 7. Honored North Dakota Physicians (pictures and biographics), 8. New North Dakota Physicians (pictures and biographies), 9. North Dakota State Medical Association Reports, 10. North Dakota Medical Center Reports, 11. North Dakota Health Insurance Reports, 12. North Dakota Medical Business and Law, 13. North Dakota Medical Statistics, 14. Medical Book Reviews, 15. Physician Deaths, 16. Classified Advertisements, 17. Advertisements.

Respectfully submitted,
(Signed) A. Malcolm Cameron, M.D., *Delegate*
Fourth District Medical Society

## Fifth District

The Sheyenne Valley Medical Society held six meetings during the year of 1967. The Society has twelve members.

The first meeting was held in January with election of officers and delegates as follows:

President, Neil A. MacDonald, M.D.; Vice-President, John W. Goven, M.D.; Secretary-Treasurer, Warren R. Jensen, M.D.; Delegate, John W. Goven, M.D.; Alternate Delegate, Walter A. Craychce, M.D.; Blue Shield Corporation Members, John W. Goven, M.D., Walter A. Craychee, M.D.; Director of Blue Shield, Clifford J. Klein, M.D.; Program Chairman, Milton O. Berg, M.D.

The meeting following the election was about the A.M.A. retirement plan including a film describing the Keogh Law.

The February program was presented by John E. Leigh, M.D., Fargo, North Dakota, and was mainly concerned with the clinical application of central venous pressure.

The April meeting included a scientific program which was presented by J. W. O'Hearn, M.D., Fargo, North Dakota, wherein he discussed the most common ear problems.

During the spring and summer, no meetings were held because of weather and other conflicts.

In September the Society was honored by the presence of the State President, V. J. Fischer, M.D. He was accompanied by Mr. Limond and Mr. Wagner. Dr. Fischer spoke about the purpose of the county, state, and national societies.

The October program was presented by H. Charles Walker, M.D., radiologist of Devils Lake and Valley City. He presented a series of X-rays on diseases of the gallbladder and bile ducts. It should be noted that Dr. Walker has attended other society meetings.

The November program was presented by Dr. Hubert Carbone. He spoke on mental health problems in North Dakota, also about the State Hospital.

Even though the number of meetings was less than usual, it was felt that the year was rather successful and needless to say, the post-meeting dinners were enjoyed by all.

Respectfully submitted,
(Signed) C. J. KLEIN, M.D., *Councillor*,
Fifth District

RESOLUTION

WHEREAS, there have been documented numerous instances of excessive weight loss in students participating in the public school wrestling program, and

WHEREAS, this excessive weight loss may jeopardize the general health and well-being of the student participant,

BE IT HEREBY RESOLVED, that all students participating in an approved North Dakota High School Activities Association wrestling program, be subjected to a rigid physical examination at the beginning of the school year, at which time criteria for the participant's optimum weight be determined, and these criteria and acceptance thereof be verified in writing by the examining physician and the participant's parents or guardian, and

BE IT FURTHER RESOLVED, that this optimum weight be the lowest weight at which the participant will be allowed to wrestle for the ensuing school year.

Respectfully submitted,
The Sheyenne Valley Medical Society

## Sixth District

I was unable to attend the State Meeting, May 5, 6, and 7, 1967. Doctor Gregware attended in my place.

The Sixth District Medical Society met on May 15, 1967, with a group of the area's prominent citizens, to hear an address by Doctor James L. Dennis, Dean of the University of Oklahoma Medical Center, on Community Health Planning.

During his address Doctor Dennis made the following points: (A) Health services are trained people at work. (B) Our mission is to serve the health needs of mankind. (C) Our greatest problem is population. (D) Medicine and industry have created all the social problems. (E) Health is basic to a community.

I was appointed to the Committee on Medical Education and the Committee on Cancer of the State Medical Association in July, 1967.

On September 6, I made an inspection trip of the North Dakota Rural Electric and Telephone Cooperative Building.

On September 25, the Sixth District Medical Society was addressed by Doctor V. J. Fischer. He discussed the following: (A) The local society. (B) Third party vendors. (C) AMA dues. (D) Federal government programs. (E) What is the AMA doing for you? (F) What are the doctor's responsibilities?

The applications of Doctors Eunice Davis, Robert Jennings, and Roland Fleck for membership in the Society, were approved. Doctor Marlin Johnson gave a report of Blue Shield Board Meetings, in particular the proposition that lay members should be added to the Board.

On September 30, I attended the Dakota Medical Foundation Darrow-Long Lecture and Symposium at Fargo.

On the occasion of Governor George Romney's appearance in Bismarck, October 24, I met him and escorted Governor and Mrs. Romney to the speaker's platform.

On October 28, 1967, I attended the 11th Annual Fall Clinical Conference sponsored by the Quain and Ramstad Clinic and the Bismarck Medical Foundation.

On November 6th, I attended the Republican 3rd Legislative District Reorganization Meeting, at the Prince Hotel.

The Sixth District Medical Society met on November 14th to hear Doctor C. Harrison, Cardiologist, from the Mayo Clinic.

He discussed the cardiac arrhythmias very comprehensively.

Applications for membership in the Society, of Doctor Bakken and Doctor Lim, were acted upon favorably.

Officers were elected as follows:

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| *President* | |
| JOSEPH W. CLEARY, M.D. | Bismarck |
| *President-Elect* | |
| MYRON GOUGHNOUR, M.D. | Bismarck |
| *Secretary-Treasurer* | |
| DELANO PFEIFLE, M.D. | Bismarck |
| *House of Delegates* | |
| O. V. LINDELOW, M.D.<br>Term expires 1970 | Bismarck |
| J. J. MOSES, M.D.<br>Term expires 1968 | Bismarck |
| M. A. K. LOMMEN, M.D.<br>Term expires 1968 | Bismarck |
| R. J. DUNNIGAN, M.D.<br>Term expires 1968 | Bismarck |
| M. J. E. JOHNSON, M.D.<br>Term expires 1969 | Bismarck |
| WM. C. RIECKE, M.D.<br>Term expires 1969 | Bismarck |
| *Alternate Delegates* | |
| W. D. WALDSCHMIDT, M.D. | Bismarck |
| W. J. ORCHARD, M.D. | Linton |
| J. P. SAUER, M.D. | Bismarck |
| P. R. GREGWARE, M.D. | Bismarck |
| G. E. TOLSTEDT, M.D. | Bismarck |
| J. W. CLEARY, M.D. | Bismarck |
| *Board of Censors* | |
| E. D. PERRIN, M.D.<br>Term expires 1969 | Bismarck |
| R. W. HENDERSON, M.D.<br>Term expires 1969 | Bismarck |
| P. L. OWENS, M.D.<br>Term expires 1970 | Bismarck |
| *Board of Directors, North Dakota Physicians Service* | |
| O. V. LINDELOW, M.D.<br>Term expires 1970 | Bismarck |
| M. J. E. JOHNSON, M.D.<br>Term expires 1970 | Bismarck |
| A. F. SAMUELSON, M.D.<br>Term Expires 1969 | Bismarck |
| C. A. ARNESON, M.D.<br>Term expires 1969 | Bismarck |
| *Councillor* | |
| ROBERT B. TUDOR, M.D.<br>Term expires 1969 | Bismarck |

I attended the Interim Council Meeting in Fargo, December 9, 1967.

The Sixth District Medical Society met on February 7, 1968 and heard a panel consisting of Doctor Paul Johnson, Mr. Al Wolf and Doctor Robert Tudor discuss the "New Jersey" system for screening malpractice claims. Its aim is to reduce nuisance suits and to strengthen legitimate claims.

Doctor Ed Vinje of Hazen resigned from the House of Delegates and the Blue Shield Board.

Doctor Lindelow of Bismarck was elected to the House of Delegates to fill Doctor Vinje's unexpired term.

Following a discussion concerning the appointment of lay members to the Blue Shield Board, Doctor Cleary, the President of the Society announced that the Society would vote on this proposition at its April Meeting.

I have served on the Aviation Committee of the Bismarck Chamber of Commerce and have been re-appointed to this Committee and to the Congressional Action Committee.

I have been re-elected Chairman of the Bismarck Medical Foundation.

I have been re-elected Secretary of the Bismarck Hospital Medical Staff and appointed Chairman of a Committee to revise the Constitution and By-Laws.

I have served on the Medical Advisory Group of the North Dakota Regional Program for Heart Diseases, Cancer, Stroke and Allied Diseases.

The most frequently used drug is the Doctor himself and this is a drug without pharmacology, without directions as to dosage, form, frequency of administration and without leads to hazards, allergic responses or undesirable effects.

Respectfully submitted,
(Signed) Robert B. Tudor, M.D., *Councillor*, Sixth District

RESOLUTION

WHEREAS, we believe that immunizations should be done voluntarily on an educational basis, in opposition to mandatory legislation;

NOW, THEREFORE, BE IT RESOLVED that the North Dakota Medical Association oppose any mandatory statutes regarding mass immunizations.

Respectfully submitted,
The Sixth District Medical Society

## Seventh District

Since the last report, the following meetings were held of the Stutsman County District Medical Society.

The first meeting was held on April 27, 1967, at the Gladstone Hotel. A majority of the members were present and there were a number of guests, most of whom were from the State Hospital. A discussion of the Headstart Program locally was held and it was decided that a charge of $7.00 for the physical examination, urine and hemoglobin would be made. Any additional charges were to be paid by the individual. There was a discussion about how much publicity an individual doctor should allow in connection with public clinics, such as a sigmoidoscopy clinic. Dr. Nierling presented a financial statement for the year 1966 which was approved by the membership. The scientific portion of the meeting was a talk by pathologist, Raymond Pilot, M.D. on the subject of "Liver Function Tests". This was a very informative and interesting presentation.

The second meeting of this interval was held on May 25, 1967. The majority of the members were present and there were several guests from the State Hospital. Dr. Van der Linde was re-elected Councillor from the Seventh District for the next three years. Dr. Van der Linde reported to the group on the State meeting of the Council. It was noted that Dr. Pederson had been elected second Vice-President of the State Association and this was roundly approved. The scientific portion of the program was given by pathologist, Walter Wasdahl, M.D., of Grand Forks, on the subject of "Genetics", which was an intensely interesting presentation, very clear cut and well presented.

After the summer recess, the third meeting was held September 28, 1967 and the majority of the members were present with several guests from the State Hospital. Mr. Limond was present and had brought along Mr. Vernon Wagner, who had been Assistant Executive Secretary of the State Medical Association since July 1 of 1967. Mr. W. David Coyner was present at this meeting. Mr. Coyner is a field representative of the A.M.A. Dr. V. J. Fischer presented a talk on "The Status of Medicine" and among other things, he mentioned that a public relations firm had been hired by the A.M.A. to answer criticisms immediately that appeared anywhere.

Dr. Sorkness brought up the question of whether there should be "lay" representation on the Board of Directors of Blue Shield. This was discussed thoroughly and a motion was passed that each county society have two members on the Board and the total membership on the Board not be over 30. A long discussion was had concerning Optometrists using Mydriatics, and removing foreign bodies. It was suggested that any evidence could be given to the Censors of the County Medical Society; then further action would be taken.

The next meeting was held October 26, 1967, again with a majority of the members present and several guests from the State Hospital. Dr. William Erickson, a pediatrician, was elected into active membership of the Society. The program consisted of Dr. John Gillam of the Department of OB and GYN of the Fargo Clinic, who spoke on the subject of "Hormones in the Menopause". He presented this subject, which is of great interest generally, in a lucid manner.

The next meeting was held November 30, 1967, again with a majority of the members present and several guests. The program consisted of Dr. Robert Story of the Cardiovascular Section of the Fargo Clinic, presenting the subject of "The Acute Coronary Care Unit". He discussed in great detail their experience at the St. Luke's Hospital with this unit and this talk was very well received.

The January 25, 1968 meeting was held with most members present. During the business session, Dr. Van der Linde presented a summary of the meeting of the Council held at Fargo in December. Dr. Lester D. Shook, radiologist, was voted into membership of the Society. A motion was made and passed that the County Society go on record and notify the Jamestown Hospital Board of Trustees that it was felt that an increase in the number of physicians would be desirable. A lengthy discussion ensued regarding the type of telephone listings physicians should employ. This was the annual meeting and new officers were elected, as follows: Dr. James Bishop, President; Dr. Bernard March, Vice-President; Dr. Richard D. Nierling, Secretary-Treasurer; Doctors Edwin O. Hieb and James V. Miles, Delegates to the State House of Delegates; Alternate Delegates are Doctors Clement and Bishop. One new censor was elected—Dr. Beall to fill the expired term of Dr. Curtis. Doctors Joseph Sorkness and John Swenson were re-elected to the Blue Shield Directors Board and the Corporation members elected were Doctors Clement, Miles, Hieb, Pederson, Sorkness, Van der Linde, and Swenson. The scientific portion of this meeting was given by Dr. Hubert Carbone, Superintendent of the State Hospital, on the subject of "Anxiety". He presented this subject in his usual very lucid manner.

The last meeting was held on February 29, 1968. The business portion of this meeting was mainly a long discussion of "Telephone Listings", and a decision was reached about the use of block ads in the telephone directory. It was decided that each individual doctor would decide for himself how to list himself and/or his specialty. The scientific portion of the meeting was given by Dentist, Dr. Paul Iverson, who spoke on "Surgery for Correction of the Maxillofacial Area".

Respectfully submitted,
(Signed) John M. Van der Linde, M.D.,
*Councillor*, Seventh District

## Eighth District

The members of the Eighth District Medical Society met in February, 1967, for election of officers. The following were elected:

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| President | DONALD E. SKJEI, M.D. |
| Vice-President | DEAN R. STRINDEN, M.D. |
| Secretary-Treasurer | ROBERT C. KOCH, M.D. |

This was mainly a business meeting and no program had been planned for the evening.

The next meeting was held in April 1967 and the members of the District Society entertained their wives. G. W. Toomey, M.D., President of the North Dakota State Medical Association, was the speaker for the evening and gave his Presidential address.

Dr. William M. Buckingham was also present and showed his slides on his trip to Central America. These were educational, as well as beautiful, and were enjoyed by everyone.

At the May 1967 meeting of the District Society, Dr. Gerd Fischer of Bismarck was the guest speaker for the evening.

A report was made to the members concerning the actions taken at the annual meeting of the North Dakota State Medical Association.

No meetings were held during the summer months.

The next meeting was held in November, 1967. Percy L. Miller, M.D. of the Rehabilitation Center in Grand Forks was the speaker for the evening. His presentation was well received and of interest to all the members present.

The first meeting of the current year was held on January 27, 1968. The order of business was the election of officers. These are as follows:

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| President | D. R. STRINDEN, M.D. |
| Vice-President | R. C. KOCH, M.D. |
| Secretary-Treasurer | EOIN HARVEY, M.D. |

Guests of the meeting were Dr. V. J. Fischer, President of the North Dakota State Medical Association, who addressed the members, Mr. Vernon Wagner and Mr. Lyle Limond of the State Office, and Dr. Willard Wright, Director of the North Dakota Regional Medical Program. Dr. Wright briefly described the progress of the program.

In February, 1968, a joint meeting of the Kotana District Medical Society and the local Bar Association, was held. Guests of the meeting were Mr. Mitchell Mahoney, Minot practicing Attorney, Dr. Paul Johnson, Bismarck, the Association's Liaison Officer to the North Dakota State Bar Association, and Mr. Vern Wagner of the State Office. A vigorous discussion ensued and the meeting was considered highly successful and enjoyable.

Respectfully submitted,
(Signed) Dean R. Strinden, M.D., *Councillor*
Eighth District

## Ninth District

The Ninth (Southwest) District Medical Society held a total of three meetings during the past year.

On April 8, 1967, the meeting was held at the Ray Hotel and we had the privilege of having our State President, Dr. Glenn W. Toomey, there to speak to us on the problems facing medicine today. The second speaker for the evening was Dr. William M. Buckingham, who talked on legislation and lobbying, pointing out that all bills introduced to the State Legislature are considered by the Legislature.

On September 30, 1967, the Southwest District held its meeting at the Crown Room at the First National Bank with 16 members present. A very interesting and informative program was presented by Speaker Dr. W. C. Barker, of Chicago, Illinois. The program was supported by a grant from the Merck Sharp and Dohme Post-Graduate Council.

February 26, 1968, was the last meeting held. At this time, officers were elected for the coming year of 1968. President, W. M. Swenson, M.D.; Vice-President, R. J. Dukart, M.D.; Secretary-Treasurer, R. F. Raasch, M.D.; Corporation Members, R. Dukart, M.D., R. Hankins, M.D., H. Larsen, M.D., A. Gilsdorf, M.D., N. Ordahl, M.D.; Blue Shield Board, A. Gilsdorf, M.D., R. Hankins, M.D.; Delegates, R. Raasch, M.D. and R. Hankins, M.D.; Alternate Delegates, H. Larsen, M.D. and N. Ordahl, M.D.; Councillors, A. Gumper, M.D., D. Reichert, M.D., and R. Thom, M.D.

Respectfully submitted,
(Signed) Walter C. Hanewald, M.D.,
*Councillor,* Ninth District

## Tenth District

The Traill District Medical Society has held only three official meetings since our last report. There have been other non-official meetings among the members of the group. Scientific sessions consisted of guest speakers in the fields of Psychiatry, Orthopedics, and Medicine. Business sessions held some lively discussions on the state meeting, Blue Shield and its problems, and reports of members of different committees of the State Medical Association. We have had good attendance at all official meetings. Most of our members remain quite active on different state committees and organizations.

The following officers were elected for the present year:

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|---|---|
| President | DR. PETER PATTON |
| Vice-President | DR. H. A. LaFLEUR |
| Secretary-Treasurer | DR. R. W. McLEAN |
| Delegate | DR. JAMES LITTLE |
| Alternate Delegate | DR. KENNETH WAKEFIELD |
| Councillor | DR. R. W. McLEAN |
| Board of Censors—3 years | DR. R. C. LITTLE |
| 2 years | DR. H. A. LaFLEUR |
| 1 year | DR. D. J. BREEN |
| Corporate Members to Blue Shield | DR. R. W. McLEAN<br>DR. JAMES LITTLE |
| Board of Directors to Blue Shield | DR. R. W. McLEAN |

The Traill-Steele District Medical Society recommends that the North Dakota State Medical Association go on record in favor of proposed legislation allowing each school district the privilege of making its own decision, after proper testing and recommendations, for the admission to school or holding back from school those children falling into these categories. According to their ability rather than chronological age.

Respectfully submitted,
(Signed) R. W. McLean, M.D., *Councillor,*
Tenth District

## COMMITTEE ON LEGISLATION

The Committee has been comparatively inactive for all of 1967 because primarily this is an off year legislative-wise. Nothing has been thrown across my desk, I do not know if any of the other members of the Committee have had anything thrown at them, but essentially speaking, there is probably a good deal of thinking insofar as legislative things are concerned for the next legislature. But, there has been nothing to offer as far as the Association is concerned for this past year.

Now, there are a few things that we should take into consideration and I will herewith indicate the things that we should be thinking of insofar as the Association is concerned. There are many things that are coming up legislative-wise, especially now that Medicare is being extended and will continue to be extended unless we as physicians really get down to brass tacks and offer resolutions, and a thing of this nature has to come from a large segment of the country rather than just one Association in order to carry any weight.

I do feel that we should spurn anything that smells of socialized medicine although we do have it after a fashion, we still have the integrity of the physician to his patient and the relationship that exists therewith. As yet we would like to maintain this, if possible.

The Senate probe of the Abraham Ribicoff subcommittee into physicians fees probably will not come off this coming year. I do think that, however, in view of the fact that there has been a significant rise in the cost of health care especially in this past year and slated for the coming year, one would probably have to be a little bit careful regarding raising fees.

Another thing that's coming up, and very likely most of you are acquainted with, is simply that Blue Cross and Blue Shield will limit raises of fees to once a year only, and then only after a 90-day notice has been given.

I do feel that in spite of the fact that we did have our ears pinned back to some extent in the last legislature because of our abortion laws, I do feel that we should probably attempt to liberalize this to some extent and to get in line with other states that have done so. Frankly, if you get an evaluation from the states that have done so, this really hasn't changed the situation very much except that it makes the physician much less liable insofar as a medical liability suit is concerned.

Another thing that I think maybe that the profession at large should know. There is such a thing as an umbrella liability coverage available now because of the fact that medical liability suits have increased and not only have they increased but the amount has increased sizably to the point where it is considerably above the amount that the average physician carries. Hence, this should be corrected in some manner or other so that the individual after 25 or 30 years will not suddenly find himself faced with a million and a half dollar suit and go bankrupt because he only carried 200,000 to 300,000 dollars liability.

The reduction in malpractice suits has gone down sizably in New Mexico since the lawyers and the doctors there got together and are screening all medico-legal cases prior to the fact that they come to a suit. This has decreased this very appreciably in the state, as a matter of fact, it was 7th in the per capita suits filed in 1962 and after they instituted this committee, they had fallen to a point where by 1966 they were classified as 48th in the union.

I presume that in the next legislative session we will have to think a good deal about many of the things that have faced us in the years gone by. There is not too much question in my mind that the Podiatrists will be there again with a bill to increase the amount of work legally that they can do. There is little question about the fact that there is going to be an attempt made again to have an adolescent treatment center because this has not been too successful at Jamestown.

There will probably be a bill increasing the psychological approach to the patient again giving these boys just a little more leeway than they have had in the past and less supervision by psychiatrists.

I'm also of the opinion that the abortion law in North Dakota is not sufficient and something happened so that it was not acceptable at the last legislative session. This should be reconsidered.

There will be probably a concerted effort to try and see that Grafton or the School for the Mentally Retarded will not have quite the prerogative insofar as sterilization operations are concerned, as they do at the present time. They will probably try to liberalize this and we should watch this.

The osteopaths have always been in there and I expect that they will be in there again with the request for a good deal of liberalization and I'm somewhat of the opinion that this is being fostered to some extent by a good number of M.D.'s in the state who have not taken cognizance of the fact that there has been a study made by representatives of the North Dakota State Medical Association and they have found that these schools do not have a curriculum which is comparable to the curriculum which we find in the average medical school, hence these boys apparently do not have the background that the M.D. does have.

I have not heard anything from the otologists regarding how they feel about these people that are going through the state selling hearing aids, and for other related purposes regarding hearing. As a matter of fact, I do not feel that Otologists have entered into the picture sufficiently to be recognized by the health nurses throughout the state and when they have a problem they do not approach this problem insofar as the medical profession is concerned quite commonly, but go to the psychologists or lay people who aid and assist them with any problems that they may have.

There will probably be an effort to give the insurance commissioner the right to regulate the rates of hospital services and contracts. I will not express myself on this. It did go to defeat last time as I recall this act, but I do not feel that they have totally given up.

It would be the desire of the legislative committee to have each medical specialty group in the State pick one, or preferably two, men who can be called on by the legislative committee to testify on any given bill affecting their particular field of medicine. This way we can have very knowledgeable witnesses testifying on these bills. The other point is that we would like very much for each district society to set aside one of their meetings as a legislative meeting when one of their legislators from their district could come in and fully explain how bills are written, introduced and acted upon in all the various mechanics so that our people would be well aware of the legislative procedure. In addition, we would once again want to ask you if you feel that you are politically naive to try and get more information on legislative procedure and politics.

As a last and parting shot, I do think that it would be well to attempt to set up the state into districts again so that we have a key man in every district who will get after a problem if we so desire on very short notice. This could best be done through the Office of the Executive Secretary.

Respectfully submitted,
(Signed) O. W. Johnson, M.D., and
W. M. Buckingham, M.D., *Co-Chairmen*
Committee on Legislation

## COMMITTEE ON MEDICAL ECONOMICS

In the past year the Medical Economics Committee of the North Dakota State Medical Association met on two occasions. These meetings were held at the Oak Manor, Fargo, North Dakota, on December 8, 1967, and January 19, 1968. The committee mourns the loss of one of its prominent members, Dr. S. E. Shea, who passed away in 1967. The Medical Economics Committee now has 24 members with all specialties and general practitioners represented. In addition, the chairman of the Rates and Planning Committee for Blue Shield attends the meetings of the Medical Economics Committee, and the chairman of the Medical Economics Committee attends the meetings of the Rates and Planning Committee of Blue Shield as a means of liaison between these committees. This has worked out well and both committees have benefited from this arrangement since July, 1967. This should be continued.

The Physicians Advisory Subcommittee to the Public Welfare Board on Title XIX of P.L. 89-97 consists of twelve physicians, six of whom are members of the Medical Economics Committee. This type of representation from the Medical Economics Committee on the Physicians Advisory Subcommittee should be continued. The Physicians Advisory Subcommittee and the Hospital and Nursing Home Advisory Subcommittee are established by the Public Welfare Board out of choice and are not mandatory as is the Medical Care Advisory Committee, to the Public Welfare Board. This latter committee is intended to be representative of persons of varied background in the health field and also includes representatives of consumer groups of medical services. The concern of the Medical Care Advisory Committee centers around the scope of the medical program and whom the program should reach, notions about public policy in relationship to future expansion, etc. There are fifteen appointees to this committee including one or two members from each of the two subcommittees. The functions of the subcommittees are more closely related to standards of care, administrative practices in program operation, and the communication of information to professional groups and institutions, etc.

The Physicians Advisory Subcommittee met on three occasions in 1967 at the State Capitol Building. James V. Miles, M.D. was elected chairman of the subcommittee and O. V. Lindelow, M.D., vice-chairman. The meetings were held on May 20, 1967, September 23, 1967, and December 16, 1967. Another meeting is scheduled on March 30, 1968.

On May 7, 1967, the House of Delegates of the North Dakota State Medical Association resolved that: 1. The Medical Economics Committee consider and make appropriate plans for reviewing the fee schedules of the North Dakota Crippled Children's Service, and insist that this agency accept the fee schedules as suggested in the October, 1966, Relative Value Guide of the North Dakota State Medical Association, plus a conversion factor that will allow a payment of the usual and customary fees of the physician; 2. That with the implementation of additional public assistance programs such as Title XIX, it is paramount that similar recommendations for fees be consistent throughout all of the state welfare agencies; 3. That the Physicians Advisory Subcommittee to the Public Welfare Board regarding Title XIX be encouraged to act forcefully in their negotiations with the Welfare Board.

The problem of physicians fees under the Crippled Children's Service program was discussed at the meetings of the Physicians Advisory Subcommittee on May 20, 1967, September 23, 1967, and December 16, 1967. It should be noted that as of October 1, 1967, the Crippled Children's Service abandoned their separate hospital fee schedule and payments to hospitals are now made at the same rate as established for Title XIX. At the meeting on September 23, 1967, the committee was informed that in the future all new applications and re-applications for medical care under Crippled Children's Service will be processed under the eligibility requirements of the Medical Assistance Program (Title XIX). Those who have resources beyond the eligibility for Medical Assistance Program will be further screened according to the more liberal means test of Crippled Children's Service and then referred for Crippled Children's Service as in the past. Also, sometime in the future the active Crippled Children's Service cases will be screened and those eligible financially under the Medical Assistance Program (Title XIX) will be transferred. It is the Public Welfare Board's plan to combine administration of the Medicaid and Crippled Children's Service in their Medical Service Unit. The committee was informed that it was planned to eliminate the separate Crippled Children's Service Medical Fee schedule by January 1, 1968. The Physicians Advisory Subcommittee felt that the Crippled Children's Service should be left intact because this program has rules and regulations which protect the patient from being treated by chiropractors and other non-M.D. licensed practitioners of the healing arts, whereas such protection does not exist under Title XIX. In this regard, it should be noted that the Crippled Children's Committee of the North Dakota State Medical Association passed a resolution at their meeting in December, 1967, which stated that the care of Medical Assistance cases (Title XIX) be limited to M.D.'s. Under the present North Dakota law, chiropractors are licensed practitioners and are, therefore, included in the Medical Assistance Program (Title XIX). At the December 16, 1967 meeting of the Physicians Advisory Subcommittee, the committee reaffirmed its feelings that the status of the Crippled Children's Service Program remain as is.

It should be noted that in August, 1966, the Public Welfare Board adopted (without consultation with the Medical Economics Committee) a change in conversion factors, effective September 1, 1966, as follows: Medical Services—increased from \$2.50 to \$3.25; Surgery and Anesthesia—increased from \$3.00 to \$3.25; Pathology—increased from \$4.00 to \$5.00; Radiology—continued at \$5.00 per unit. Physicians voluntarily serve the Crippled Children's Service Program and, therefore, it is the physicians' option to participate or not and to either accept or not accept the fee schedule. The Medical Director of the Crippled Children's Service Program, P. W. Freise, M.D., stated in a letter to your chairman, dated November 29, 1967, "You may be assured that this matter is being studied and Crippled Children's Services will start paying usual and customary fees as soon as we can see our way clear to do so." This problem will be discussed again at the March 30, 1968, meeting of the Physicians Advisory Sub-Committee.

Other items discussed at meetings of the Physicians Advisory Subcommittee are as follows:

1. Title XIX Coverage of "Medically Needy Children". These children cannot be covered until our legislature appropriates money for this purpose. In 1967, \$400,000 was requested from the legislature to permit a conservative expansion of the Medical Assistance Program to include medically needy children under the age of 21, but these funds were not granted. Both medically needy children and adults will have to be included in the program by 1975 according to the current federal law.

2. Drug Utilization. Under the Medical Assistance Program, North Dakota ranks high in average cost per prescription, (\$5.19), which is third highest in the nation. In 1965 the Public Welfare Board paid for 172,000 prescriptions. After discussing this problem at three meetings and being made aware of many abuses of the prescription program, the committee agreed on a "no-refill" prescription program. This became effective January 1, 1968. Pharmacists and physicians were notified of this change on December 22, 1967.

3. Authorization Limitation. The Public Welfare Board does not question the principle that a person has a right to the free choice of a physician, but this does not mean two or more at the same time. The committee made the following recommendations to the Public Welfare Board and staff: 1. That the medical authorization be issued to the physician of the patient's choice. If the physician is practicing in a clinic or partnership setting, the authorization can be to the clinic or partnership, but it must identify the person's physician who is responsible for the patient. 2. If another physician is called in for consultation, it can be listed, if in a clinic or partnership, on the same authorization by identifying the physician by name, and the service by the code in the Relative Value Guide. If physicians are in solo practice or outside of a clinic, a separate authorization needs to be requested by the consultant. 3. If a second physician is called in on the case providing care and treatment, the patient's physician needs to cover this with a report unless the patient is transferred.

The above recommendations were approved by the Public Welfare Board and became effective January 1, 1968. Physicians were notified of this by letter dated December 22, 1967, signed by J. V. Miles, M.D., Chairman, Physicians Advisory Subcommittee to the Public Welfare Board.

4. Psychiatric Services. The Public Welfare Board approved Psychiatric Services as a part of the Medical Assistance Program, effective January 1, 1968, but in a very limited way. A maximum of 7 days hospitalization and 7 days of psychiatric inpatient and outpatient care will be allowed during a six month period. This applies only to those persons who do not live in an area being served by a Mental Health and Retardation Service unit. (Essentially this is watered down to nothing!) (OVL).

5. Surgical Charges. The Physicians Advisory Subcommittee agreed that the Public Welfare Board should continue to audit post-operative visits based on the days included with the surgical fee for each procedure as indicated in the Relative Value Guide of October, 1966.

6. Payment for Physical Therapy. The committee recommended to the Public Welfare Board that payments made for physical therapy should comply with the State law which requires that a physical therapist be licensed and practice under the supervision of a physician.

7. Nursing Home Visits. The committee felt that these visits should be handled as house call visits when needed by the patient, as requested by the patient, or in his behalf by staff at the nursing home.

At the Medical Economics Committee meeting of January 19, 1968, the following recommendations were made to Blue Shield on problems that the committee had been asked to study.

1. Automated Laboratories. Some doctors in North Dakota have been drawing blood for chemistry profile studies to be done by automated laboratories and then after receiving the report would bill Blue Shield separately for each study in the profile. The Medical Economics Committee considers this fraud. The Medical Economics Committee accepted a statement of the Los Angeles County Medical Association as policy in this regard. This statement is as follows: "A physician cannot ethically add a surcharge for diagnostic interpretation of automated laboratory tests. He is entitled only to reimbursement for the cost of work done for him by an outside laboratory, plus a reasonable charge for collecting and handling specimens." Interpretation of the lab tests, the Los Angeles Committee ruled, is part of the diagnostic process for which the doctor should charge only his usual fee. The Medical Economics Committee recommended that a code number be assigned to a battery of tests (profile) done by an automated laboratory and a separate code number be assigned for single tests done by an automated laboratory. This recommendation was accepted by Blue Shield and such code numbers will be developed.

2. Cancer Chemotherapy. Cancer chemotherapy was defined as the treatment of malignant disease with cytotoxic injectables stemming from a confirmed pathological diagnosis of malignancy. (This is now included in the new Blue Shield contract).

3. Concurrent Services. Concurrent services by more than one physician will be covered when properly documented, giving the name of each physician and the services that were actually provided by each physician. (This is now included in the new Blue Shield contract.) A definition of concurrent services was sent to all members of the North Dakota State Medical Association by the chairman of the Medical Economics Committee in a letter dated February 13, 1968.

4. Doctors' Visits to Nursing Homes. These will be paid on the basis of usual and customary, reasonable and prevailing charges up to a maximum of four visits per month. Visits in excess of this number must be properly documented and will be submitted to the Claims Review Committee for adjudication.

5. Anesthesia Charges For Cardioversion and Charges For Intensive Care by an Anesthesiologist. The Committee agreed that when such services are properly documented, they should be paid by Blue Shield.

6. Improved Description of Medical Services. The pamphlet entitled, "Comprehensive Health Care; Medical Services—Guidelines for Health Insurance" published by the American Society of Internal Medicine, was reviewed and was considered to be a more concise description of medical services which could be of value to physicians in properly coding such services for third parties. The committee agreed that this pamphlet should be sent to all physicians. This was done in a letter to all physicians dated February 13, 1968.

On May 2, 1967, Blue Shield published and distributed its book titled, "Medical Terminology and Procedural Codes" to be used for Blue Shield claims and Medicare-Part B claims, effective May 8, 1967. This book contains no relative value units but leaves spaces for a physician to include his usual and customary fee. The code numbers conform to those in the 1966 edition of the Relative Value Guide of the North Dakota State Medical Association. The Specific Diagnostic Services portion of the Medical Section of this book are marked with an asterisk and are considered for payment as laboratory procedures. Code No. 0100—Emergency First Aid for Accidents—was added, this code number not being in the Relative Value Guide. The book contains no section on Anesthesia and contains no general information in any section that would further define certain procedures or services. However, the book serves a useful purpose in that it promotes uniform coding of procedures and services.

CHAMPUS. (Civilian Health and Medical Programs of the Uniformed Services). A letter from Gen. Norman Peatfield, the program director, dated July 20, 1967, suggested the possibility of a change in our fiscal administrator (State Medical Society of Wisconsin) when our present contract runs out on April 30, 1968. It was later learned that they do not intend to change the fiscal administrator for this program in North Dakota. In this regard, the North Dakota Physicians Service has indicated its willingness to administer the CHAMPUS program.

MEDICARE. Medicare-Part B (As of January 20, 1968) is receiving approximately 56% of Medicare-Part B claims on an assignment basis. If professional component claims are included, the percentage is increased to approximately 62%. The members of the North Dakota State Medical Association should be urged to abide by their original philosophy of direct billing and not take assignments.

The Public Welfare Board of North Dakota has purchased government Medicare-Part B coverage for welfare recipients age 65 and over except those recipients who are eligible for medical care only. In addition, they have also purchased Blue Shield-Medicare-Extended contract including coverage for home and office visits as well as mental and nervous conditions for eligible recipients. The Public Welfare Board has also entered into an agreement with Blue Cross of North Dakota to provide benefits in accordance with the terms of the Blue Cross Medicare Extended contracts. Blue Shield and Blue Cross are submitting proposals to the Public Welfare Board to apply to Title XIX for their beneficiaries under 65, on both an underwritten firm premium and a cost-plus basis.

Recent amendments to the Medicare Act and the effective dates of each are as follows:

1. Payment of physicians services now may be on a basis of itemized bill rather than receipted bill. Effective January 2, 1968.

2. Elimination of physicians certification on admission to a general hospital and for outpatient services. Certification is still required on long term cases no later than the 20th day. Effective January 2, 1968.

3. Outpatient diagnostic services to be covered under Part B. Effective April 1, 1968.

4. Inpatient pathology and radiology services will be reimbursed as 100% under Part B of the reasonable charges and are excluded from applying towards deductibles. Effective April 1, 1968.

5. Durable equipment may be purchased if total rentals equals or exceeds purchase cost, according to regulations. Effective January 1, 1968.

6. Outpatient physical therapy will be covered under Part B when rendered under authorized conditions. Effective July 1, 1968.

7. Portable x-ray services in patient's home will be covered. Effective January 1, 1968.

8. Blood deductibles: Part A. Deductibles and co-insurance will apply to packed red cells as well as whole blood. The first three pints of blood furnished a patient are to be added to his deductible during a calendar year, but may be reduced by a pint-for-pint replacement. Effective January 1, 1968.

9. Sixty-day lifetime benefit: Following 90 days of hospitalization, each individual will have an additional 60-day lifetime benefit. Each of the first 30 days of this benefit will be subject to co-insurance equal to ¼ of the inpatient hospital deductible, (Currently $40.00) and each of the second 30 days will be subject to co-insurance equal to ½ of the deductible. Effective January 1, 1968.

10. Tuberculosis inpatient services now will be treated as any other medical condition and no longer subjected to the same restrictions as psychiatric patients.

11. Part B claims for Deceased: Payment may be made to the physician, as if the patient were still living (if assignment accepted).

12. Psychiatric inpatient services limited: If a patient already is hospitalized upon becoming eligible for Medicare, his total number of allowable days (150) will be reduced by the number of days hospitalized prior to becoming eligible. This reduction does not apply to other types of inpatient hospital services, or in determining the 190 day lifetime limit on inpatient psychiatric services.

13. Podiatry Services: Limited services now authorized in states where licensed.

14. Increased Social Security tax rate and wage base: In 1968, to pay for these increased benefits, the wage base subject to this tax is increased from $6,600 to $7,800 with the employee-employer contribution at 4.4% each.

The Medical Economics Committee was asked to recommend a unit value for Indoklon therapy. It was the consensus of the committee that the Relative Value for this procedure should be 5 units, that is the same as electroconvulsive therapy. Indoklon therapy is sometimes given by the psychiatrist and sometimes by an anesthesiologist. The committee felt that the physician administering the treatment should receive the fee since he assumes complete responsibility for the procedure.

It is difficult to deal with government third parties in requesting that they use a standard coding for services and procedures (such as that given in the 1966 Relative Value Guide of the North Dakota State Medical Association) when at least some segments of one specialty group in our state refuse to abide by the Relative Value Guide coding. This refers to some of the radiologists in our state who continue to use the coding and nomenclature published by their own society in billing third parties. Attempts to get the cooperation of this segment of the radiologists have been to no avail. It is hoped that when the American Medical Association publishes its revision of Current Procedural Terminology, in cooperation with all specialty groups, that such problems will be resolved. It is presumed that Current Procedural Terminology, when published, will be used by all doctors and all third parties.

We should attempt to avoid the use of relative value units (except as a guide) and instead think only of usual and customary fees.

Your chairman, and Mr. Vernon Wagner of our state office, attended the National Conference on Health Care for the Poor, in Chicago, Illinois, on December 15 and 16, 1967. On March 22 and 23, 1968, your chairman and Mr. Lyle Limond attended the Second National Congress on the Socio-economics of Health Care, in Chicago, Illinois.

Respectfully submitted,
(Signed) O. V. Lindelow, M.D., *Chairman*
and James F. Houghton, M.D.,
*Vice-Chairman*
Committee on Medical Economics

### Supplementary Report

## COMMITTEE ON MEDICAL ECONOMICS

### April 1, 1968

The following is a report of the March 30, 1968, meeting of the Physicians Advisory Subcommittee to the Public Welfare Board on Title XIX held at the State Capitol Building, Bismarck, North Dakota.

1. The "no refill" drug program policy was reviewed. Approximately 50% of pharmacists seem to be opposed to the program. In some places the policy has been ignored.

The committee reaffirmed its belief in this type of program to help prevent drug abuses.

2. The policy regarding authorizations to physicians, partnerships or clinics for care was reviewed. The committee reaffirmed its belief in this type of policy.

3. The policy on Psychiatric Services (effective January 1, 1968), as part of the Medical Assistance Program, was reviewed. The Public Welfare Board will pay for hospitalization for psychiatric care for 7 days in any area of the state but at this time will not pay a psychiatrist for his services (outpatient or inpatient) if the patient resides in an area being served by a Mental Health and Retardation Unit. This regulation was made on the assumption that such units will pay a psychiatrist for services to recipients residing in the areas covered by these Mental Health and Retardation Units. Evidently this is not always the case. In fact, it is not clear what these units do pay for. The Public Welfare Board has tried to get accurate information from these units on this problem, but has been unable to do so. The committee recommended that the Public Welfare Board make renewed efforts to obtain this information. If it is true that the Mental Health and Retardation Units do not pay for the services of psychiatrists in treating Medical Assistance patients, then the Public Welfare Board will probably assume this obligation with the time limits as previously set forth.

4. "Buy in" program for Title-XVIII. Because of amendments to the Social Security Law passed by Congress in December, 1967, it became necessary for the Public Welfare Board to purchase government Medicare-Part B coverage for welfare recipients over 65 years of age, except recipients receiving *medical care only* in the welfare program. Evidently the amendments stated that unless such coverage was purchased for this group, no federal money would be allowed for this portion of the Medical Assistance program. Prior to this time, the Public Welfare Board was paying for such coverage for about 60% of the recipients who had voluntarily asked for such coverage.

The Public Welfare Board then explored the possibility of purchasing coverage for the co-insurance and deductibles for this group. They then purchased Blue Shield-Medicare-Extended contract for this coverage. This also includes coverage for home and office visits as well as mental and nervous conditions. Blue Cross-Medicare-Extended was also purchased for this group. This contract includes coverage for 730 days hospitalization with each spell of illness. These contracts with Blue Cross and Blue Shield include approximately 4,300 individuals and the program became effective January 1, 1968. There are between 1400 to 2000 individuals on medical care only on the welfare program who will not be covered by these contracts.

A problem has arisen regarding how non-covered services and supplies will be paid for on this contract program. Examples would include immunizations such as flu shots, dental care, dentures, eye glasses, hearing aids, etc. Should such a limit be put on welfare recipients? The suggestion was made that Blue Shield be asked to contract to cover these items. However, since the contract is only three months old, it was felt that the solution to this problem should await further experience. It will be brought up again at the next meeting.

5. Crippled Children's Services. Mr. Gottfried Kuhn, Director of Medical Services of the Public Welfare Board, stated that as of March 29, 1968, the Crippled Children's Services had administratively been changed from the Division of Children and Youth to the Medical Services Division and, therefore, Mr. Gottfried Kuhn would now direct the program. Apparently the rules and regulations of Crippled Children's Services would not be changed. Mr. Kuhn could not give any definite date regarding a change from the present Crippled Children's Services fee schedule to a usual and customary basis. The Crippled Children's Services Program is funded differently than the other welfare programs. Federal monies for this program vary from 40% to 60%. Mr. Kuhn stated that at present the Crippled Children's Services Program is $70,000 in the red. Mr. Kuhn was reminded that in a letter to your Chairman, dated November 29, 1967, P. W. Freise, M.D. stated: "You may be assured that this matter is being studied and Crippled Children's Services will start paying usual and customary fees as soon as we can see our way clear to do so." Considerable discussion brought us no closer to a solution. A recommendation was again made that fees for Crippled Children's Services be the same as those for all other government third parties; that is, the usual and customary fee of the physician. This problem was again placed on the agenda for the next meeting of the Physicians Advisory Subcommittee.

6. Public Relations And News Releases. The following statement was read to the Committee by your Chairman:

"The Physicians Advisory Subcommittee to the Public Welfare Board on Title XIX (P.L. 89-97) makes a strong recommendation to the Public Welfare Board and its staff to cease putting out distorted facts in their press releases which mislead the public. (Note the Bismarck Tribune, March 28, 1968, headline story: "Welfare Denied $300,000. N.D. Officials: Funds Needed For Medical Aid." The North Dakota State Medical Association has for many years asked the Public Welfare Board and its staff to give honest and unbiased information to the press. However, the Medical Association's pleas have been to little avail.

The public frequently equates "medical costs" with doctor costs. The public should be given the truth. For instance, doctors charges have gone up since calendar year 1966 because in October, 1966, the Public Welfare Board, finally, after many years, agreed to pay doctors their usual and customary fees instead of 50% of usual and customary fees which doctors had been receiving for many years for the care of welfare recipients. In these same years, while doctors had been receiving 50% of their charges, other vendors of medical care and welfare recipients care were receiving their full charges for services and commodities.

Also, the public should be informed that Public Law 89-97 recommended that doctors be paid their usual and customary fees. The law also recommended equal care and first class medical care for all recipients. This necessarily includes intensive care, organ transplants, etc., and these items are costly. The law also releases relatives from monetary obligations in the care of their parents. This necessarily puts a greater burden on welfare money.

Hospital and nursing home charges have gone up, but so has the minimum wage (ordered by our federal government), the cost of equipment, food and supplies for these institutions (who provide 24 hour service and personnel), and the cost of living in general. None of us, including doctors, are immune from the effects of the rise in the cost of living.

The Physicians Advisory Subcommittee to the Public Welfare Board on Title XIX (P.L. 89-97) strongly recommends that the Public Welfare Board and its staff give the public honest and undistorted facts, with adequate explanation, in their news releases and other reports for public use." (O. V. Lindelow, M.D.)

A re-write of the Bismarck Tribune article from the Jamestown Sun was presented by Dr. James Miles and read to the committee. After considerable discussion the committee agreed to only include the last paragraph of the above statement in the minutes.

The newspaper articles referred to above quoted Mr. Leslie Ovre, Director of the Public Welfare Board, stating that a $300,000 deficit would exist in welfare funds at the end of the calendar year and by June 30, 1969, another $400,000 deficit would be added. These are only state funds. If federal funds are included, the amount would be three times those given above. Much of this deficit was attributed to the costs of the Medical Care Program. These costs had been anticipated in the budget of the Public Welfare Board but the extra funds were not granted by the North Dakota Legislature in 1967.

Possible solutions to the deficit were discussed. The consensus of the committee was that if a percentage reduction becomes necessary, it should be for all providers of services and goods to welfare recipients. It was also suggested that the efficiency of the entire welfare program (including administration) be scrutinized and that utilization of the program be restudied to make sure that recipients are truly welfare patients and that those receiving nursing home care are truly eligible for nursing care. It was also suggested that if a percentage reduction becomes necessary, it might also include a percentage reduction in staff salaries of the Public Welfare Board!

Nursing home costs account for 43% of the medical budget of the Welfare Department. Per-diem costs are quite variable for nursing homes, ranging from $150 to $410 per month per patient. The Public Welfare Board has adopted a ceiling of $360 per month for each patient and this may have to be lowered. There are approximately 1200 welfare patients in nursing homes in North Dakota. Fifty-nine percent of patients in nursing homes in North Dakota are welfare patients. This has gone up 10% in the past year.

Although the Emergency Commission had recently denied the Public Welfare Board's request for these funds, the Physicians Advisory Subcommittee recommended that the Public Welfare Board again ask the Emergency Commission for funds to make up the projected $700,000 deficit.

Members of the committee present at the meeting included Doctors Dean Strinden, James Miles, Keith Foster, Richard Raasch, V. J. Fischer, Richard Leigh, O. V. Lindelow. Doctors R. W. Henderson and James O'Toole of the Public Welfare Department were also present as were Mr. Gottfried Kuhn, Director of Medical Services of the Public Welfare Board, and other staff members of the Public Welfare Board.

Respectfully submitted,
(Signed) O. V. LINDELOW, M.D., *Chairman*
and JAMES F. HOUGHTON, M.D.,
*Vice-Chairman*
Committee on Medical Economics

### Supplementary Report

## COMMITTEE ON MEDICAL ECONOMICS

### April 4, 1968

### Blue Shield Activities During the Year

Blue Shield in 1967 agreed to allow the CHAMPUS Program in North Dakota, as administered by the North Dakota State Medical Association, to avail itself of the service of Blue Shield in determining whether a specific charge falls within the range in the state for the service rendered, as well as review of claims by the Claims Review Committee, when necessary, at a cost to the CHAMPUS Program of $2.00 per claim.

The entrance fee for doctors' membership in North Dakota Physician's Service was eliminated at the Board of Directors meeting on December 9, 1967. This is to become effective January 1, 1968.

Lay representation on the Blue Shield Board of Directors was discussed at all of the meetings of the Board. On December 9, 1967 a motion was passed that the Board of Directors present to the corporate body a resolution in favor of including lay persons on the Board's membership, their number to be determined by the corporate body, and their terms to be staggered. A roll call vote revealed 14 in favor and 11 opposed to this motion. Following this a motion was passed to recommend that three lay persons be elected to membership on the board, one for a one year term, one for a two year term, and one for a three year term, their nomination to be made by the nominating committee from names submitted to it by the District Medical Societies.

At the January 20, 1968, meeting of the Blue Shield Board of Directors, it was reported that Blue Shield at the end of 1967 had an enrollment of 220,587. Guidelines set by the National Association of Insurance Commissioners to determine adequacy of reserves of a nonprofit medical prepayment plan were stated as follows: A reserve equaling two months' claims is critical; four months is dangerous; five months is adequate; and six months requires consideration of adding new contract benefits. At the end of December, 1967, the North Dakota Physicians' Service reserve equaled 5.8 months claims; 5.3 months total claims and operating expense (less national accounts) and five months income.

The Board of Directors of Blue Shield at their meeting on December 9, 1967 agreed to do away with the Series-80 contract. Thus, the premium for the Series-100 subscribers would be reduced to the level of the Series-80 subscribers, effective on groups anniversary dates, March 1, 1968, and after and on non-group subscribers March 1, 1968 billing and thereafter. Thus, as of January 1, 1968, as far as doctors' charges, Blue Shield will pay usual and customary and reasonable and prevailing fees for all contracts. This will, of course, eliminate a means test as far as Blue Shield contracts.

The following changes were made in the new Blue Shield contract of January, 1968, by vote of the Board of Directors on January 20, 1968.

1. Emergency first aid for accidental injuries will now be covered when rendered within 72 hours instead of 48 hours.
2. Pulmonary tuberculosis coverage limited to 70 days. Other types of tuberculosis receive 365 days of in-hospital care.
3. Alcoholism to be included with nervous and mental illness and so restricted, with an additional 70 days care allowed following a 6 month interval with no treatment.
4. Payment will be allowed for sterile suture trays and casting materials in a doctor's office.
5. Routine foot care, such as trimming of corns, calluses, toenails, etc., will not be covered.
6. Services relating to intrauterine devices will not be covered.
7. Services of an assistant surgeon will be paid for.

8. Consultations changed to provide a maximum payment of $35.00 per year for such services, rather than the previous limitation of one consultation per year per subscriber.

9. Cancer chemotherapy (the treatment with cytotoxic injectables of malignant disease stemming from a confirmed pathological diagnosis of malignancy) will be covered when provided by a doctor of medicine.

10. Obstetrical delivery will have only one indemnity allowance of $125.00 for all family subscribers since there is now only one type of contract.

Other actions by the Blue Shield Board relating to Medical Economics in the past year:

1. Nursing home visits: Doctors of medicine will be paid their usual, customary, reasonable, and prevailing fee for visits to nursing homes on the basis of a maximum of 4 visits per month. If additional visits are necessary, it is required that they be properly documented.

2. Anesthesiologists will be reimbursed for cardioversion-anesthesia, and intensive care when properly documented.

3. Concurrent services (such as radiologists and neurosurgeon in doing angiograms, or internists and anesthesiologists in providing intensive care) will be paid if properly documented.

4. Diagnostic laboratory or x-rays performed by a doctor of medicine for hospitalized patients where there is no pre-diagnosed illness and where surgery is not performed, will be allowed payment by Blue Shield on the same basis as for such work done in the doctor's office.

5. Claims for tests processed by automated laboratories will be paid on the basis of allowing the automated laboratory fee (if there is an adequate diagnosis) plus a maximum agreed upon handling charge.

6. Orthopedists—Blue Shield does not pay for postoperative care in the office. The relative values in the Surgical Section of the Relative Value Guide include pre- and post-operative care, whereas the relative value units in the 1958 Relative Value Schedule did not include post-operative care beyond hospitalization. The orthopedists feel that they should not have to bill Blue Shield differently than they bill commercial carriers who allow them a flat fee for their work including pre- and postoperative care. The Blue Shield Board, at their meeting on September 23, 1967, approved a plan where adjustment in the master profile of fees based on the experience of the first 6 months of 1967, and on a $5.00 conversion factor based on the North Dakota State Medical Association's Relative Value Guide for procedures with insufficient experience during that period, would be used as a guide for payment.

7. Anesthesiologists—Anesthesiologists are paid 7 units for the first ½ hour of personal anesthesia attention, 5 units for the second ½ hour, 3 units for the third ½ hour, and 2 units for each ½ hour thereafter. The problem that has arisen is their request for a $15.00 fee for any case in which they are "legally responsible". Blue Shield's stand on this is that in order to make payment of this amount, a written consultation report must be submitted by the anesthesiologists on each case for which he submits such a claim.

8. Psychiatrists—Members of the North Dakota Psychiatric Society met with the Rates and Planning Committee on May 5, 1967 and reached an agreement which was approved by the Blue Shield Board of Directors at their May 7, 1967, meeting. Electro-shock therapy will be limited to 15 per year per patient with a relative value unit of 5 units for either out or in-patient electroshock. Psychotherapy would be allowed 6 units per hour with maximum hours per week allowed during hospitalization of 3 hours the first week and 2 hours on subsequent weeks with a maximum total hours in this category of 20 hours per calendar year. Subscribers would be covered for 70 days of inpatient hospital care per calendar year. Fees were to be adjusted to subscriber economic grouping that was used by Blue Shield at that time. Blue Shield agreed to pay both (or more) coverages applicable where a subscriber has two or more clear-cut diagnoses and agreed to cover for group therapy conducted by a psychiatrist on a rate at least equitable with other psychotherapy time spent. Standard daily care charges could be paid where there was no psychotherapy or electro-shock treatment on those given days. These daily charges could also be made on days where group therapy is administered and covered. Blue Shield agreed that the psychiatrist is entitled to make charges to subscribers for any service not covered in the contract, such as psychometric testing and therapy administered by other than a physician but that the psychiatrist must inform the patient and/or relatives of the covered and uncovered services for better patient relationship and Blue Shield agreed to completely inform present and future subscribers of the coverages given by these changes. This plan was agreed to for a 6 month trial. This 6 month trial period has been completed and has proven satisfactory and at the Blue Shield Board meeting on December 9, 1967 it was agreed to continue with this plan.

9. Ophthalmologists—Ophthalmologists had suggested payment for certain diagnostic and manipulative procedures. At the September 23, 1967 meeting of the Board of Directors, these suggested procedures were disallowed except for: 1. Tonography when done individually prior to eye surgery; 2. Tension under anesthesia prior to eye surgery. At the Blue Shield Board meeting on December 9, 1967 it was further suggested that Blue Shield pay for gonioscopies and visual fields because they were allowed under Medicare. The Blue Shield Board decided not to allow for these benefits since it was felt they were largely diagnostic in nature and almost entirely performed by a doctor's aide.

The medical consultant to the Blue Shield and Blue Cross and Medicare and the Claims Review Committee receive a few claims from doctors for services that seem definitely out of line. It is recommended by your Chairman that the grievance committees in the local medical societies be called upon by Blue Shield, Medicare, and other third parties to handle problems of possible overcharging by doctors in their area.

Respectfully submitted,
(Signed) O. V. Lindelow, M.D., *Chairman*
and J. F. Houghton, M.D.,
Vice-Chairman
Committee on Medical Economics

## COMMITTEE ON MEDICAL EDUCATION

No formal meetings of the Committee on Medical Education were held during the past year. However, the following report was received by the Committee Chairman from the Dean of the Medical School at Grand Forks, and is presented for insertion in the Handbook and review and action by the proper reference committee.

"The University of North Dakota School of Medicine continues to grow. Last fall we accepted 47 first year students—our all time high. This increase from 44 was necessary in order to qualify for a Federal Improvement of Teaching Grant. The program in Occupational Therapy was transferred to the School of Medicine, and we are developing a curriculum in Physical Therapy as well.

Our acute problems at present are as follows:

1. Informing the legislature, the physicians, and the taxpayers of our increasing financial needs. The mill levy is no longer sufficient to support the affairs of the Medical Center, and the legislature last year approved a supplemental appropriation of $680,000.00. It may be necessary to go back next year for an additional amount, as well. The reason for this is simply that the mill levy income has remained relatively stable whereas the cost of medical education has risen sharply all over the country, and we must keep abreast.

2. Space. We are badly crowded in terms of space, part of which is because of the service courses we teach to undergraduate students, such as nurses, medical technologists, physical therapy majors, occupational therapy majors, physical education majors, social welfare majors, and home economics majors; plus, we have 75 graduate students. We share with the entire University the growing pains of an increased student body.

3. The Transfer Situation. Over the years, we have transferred all of our students without difficulty into their third term at a four-year school. There has been a considerable increase in the number of well qualified students everywhere else in the nation, apparently, with the exception of North Dakota. We have always leaned over backwards to give preference to North Dakota students, and have scraped the bottom of the barrel to do so. In other schools the standards have gone up as far as undergraduate grades, results in the Medical College Admissions Test, and medical school grades. Our standards must go up correspondingly if we are to stay in business. This year we are anticipating more trouble than we have ever had before in placing the lower third of our class. We have found that the students we are having trouble with are those with poor grades, especially science grades, in undergraduate college. We require an absolute minimum grade-point average of 2.5 in the required as listed in the bulletin, as well as an overall average of 2.5. We also have to pay more attention to the Medical College Admission Test, and a student with a combination of borderline grades and a poor MCAT will have a great deal of difficulty gaining acceptance.

Our relationships with the Medical School at the University of Minnesota have been excellent. At present, there are conversations going on with the Legislative Committee about the possibility of our accepting more students of Minnesota origin, and, after the completion of two years here, these students will return to Minnesota to complete their education. Experience has shown that there is more likelihood of students staying in this area to practice if they complete their education here. This is, to date, in the conversation stage only.

We feel the need of a better presentation of our problems to our alumni, hopefully to encourage alumni support. Our North Dakota taxpayers carry a heavy burden and it would be welcome to have a more impressive level of support from our alumni through the AMA-ERF.

Again, I would express our appreciation to the State Medical Association for the prizes they offer to our students at the end of each year.

We have started a public information program that is designed to inform the legislature, the physicians, and all North Dakotans of our situation here. You will receive, from time to time, material from this office which we trust you will give your serious consideration.

Your help is essential to us and we look forward to your support in the next legislative session."

Respectfully submitted,
(Signed) R. J. ULMER, M.D., *Chairman*
Committee on Medical Education

## COMMITTEE ON NECROLOGY AND MEDICAL HISTORY

*Alas for him who never sees*
*The stars shine through his cypress trees!*
*Who, hopeless, lays his dead away,*
*Nor looks to see the breaking day*
*Across the mournful marbles play!*
*Who hath not learned, in hours of faith,*
*The truth to flesh and sense unknown,*
*That Life is ever Lord of Death,*
*And Love can never lose its own!*
—*John Greenleaf Whittier*

### J. WILBUR MORELAND, M.D.

Dr. J. Wilbur Moreland, longtime Carpio physician, died April 23, 1967, at the age of 91. He had retired in 1960 due to illness.

He was born January 7, 1876 in Potomac, Illinois and was reared there. He attended Northwestern University and graduated from medical school in 1906.

Dr. Moreland practiced medicine in Pennfield, Illinois until coming to North Dakota in 1913. After practicing at Maxbass for several years, Dr. Moreland lived at Dunn Center and moved to Carpio in 1930.

He was honored by the North Dakota State Medical Association for 50 years in the medical profession and was presented with a 50-Year Club pin and certificate.

Dr. Moreland married the former Alice Cole in Illinois in 1907. She preceded him in death in 1964. Surviving are two sons and two daughters.

### LOUIS HENRY LANDRY, M.D.

Dr. L. H. Landry, pioneer Walhalla physician, died at his home May 20, 1967, after an illness of eight years. He was 87 years old.

Born at Three Rivers, Quebec, on November 10, 1879, Dr. Landry attended college at Arthabaska and Laval University in Montreal, receiving his medical degree in 1904. He practiced in Massachusetts before coming to North Dakota in 1907. He first settled in the Leroy Community and later moved to Walhalla where the family had made their home ever since.

Dr. Landry served as a member of the town council for many years, was past President of the Grand Forks District Medical Association and a charter member of the Walhalla Country Club. In 1954 he was awarded a 50-Year Club pin and Certificate and became an Honorary member of the North Dakota State Medical Association.

He was married to Ida Elizabeth Campbell at Walhalla on December 18, 1916, who survives, along with two sons.

### D. FREDERICK GRIEBENOW, M.D.

Dr. D. F. Griebenow, retired Bismarck physician, died on June 5, 1967, at the age of 89, in a Bismarck hospital after being hospitalized since January 10th.

Born April 25, 1878, in Swanville, Minnesota, he graduated from the University of Minnesota in 1904 and taught school in Devils Lake. He returned to the University of Minnesota for his medical training, receiving his diploma of doctor of medicine in 1909, at which time he joined the Quain and Ramstad Clinic in Bismarck. Taking a leave of absence from the Clinic he went to Vienna, Austria where he completed a course in dermatology. In 1959 he was awarded a certificate of distinction and a 50-Year Club pin by the North Dakota State Medical Association for fifty years of service in the medical profession.

Dr. Griebenow was married to the former Emma Broderius on December 24, 1934. She preceded him in death.

### JOHN A. D. ENGESATHER, M.D.

Dr. J. A. D. Engesather, prominent physician and civic leader of Lakota, died June 24, 1967, in a Rochester, Minnesota hospital. He was 80 years old.

Born on a Nelson County farm, Dr. Engesather was graduated from St. Olaf College, Northfield, Minnesota and from the University of Illinois Medical Department in 1912. He had been active in his practice of medicine for 55 years, practicing in the Brocket and Park River areas before moving to Lakota in 1950.

He was active in civic affairs and served as the first commander of the Brocket American Legion Post. He also served as Treasurer of the Vaage Lutheran Church, was a member of the selective service board of Nelson County, Masons, Kem Temple of the Shrine, Grand Forks and Lakota Commercial Club and National Sognalon of America. In recognition of his 50 years of medical practice he was made an honorary member of the North Dakota State Medical Association in 1962 and was presented with a 50-Year pin and Certificate. On June 17, 1962, residents of the Lakota-Brocket area honored Dr. Engesather at an "Engesather Day" which marked the 50th anniversary of his graduation.

He is survived by his wife, the former Laura E. Norley, whom he married on June 18, 1925.

### OTTO C. MAERCKLEIN, M.D.

Dr. O. C. Maercklein, longtime member of the Mott community, died on July 25, 1967, after an illness of one day. He was 92 years of age.

Born March 10, 1875, at Newberg, Wisconsin, he attended grade and high school in West Bend. He attended the Milwaukee School of Medicine, which later became Marquette University, receiving his M.D. degree in 1897. His post graduate training was taken at Rush and Northwestern Universities. Dr. Maercklein practiced in Adams, Minnesota, as well as Ashley and Dickinson, North Dakota, before settling in Mott in 1917.

He was a member of St. Vincent's Catholic Church, a charter member of the Mott Lions Club, 4th Degree Knight of Columbus, a member of the Order of the Silver Beaver in Boy Scouts, a member of the Mott School Board, and served as mayor of Mott for 12 years. He was honored in 1947 with membership in the 50-Year Club of the North Dakota State Medical Association and received his pin and Certificate of Distinction.

He was preceded in death by his wife, Angela, whom he married September 3, 1901, at Adams, Minnesota. He is survived by three daughters and three sons.

### SAMUEL B. SHEA, M.D.

Dr. S. B. Shea, age 46, died October 20, 1967 in a Rochester, Minnesota hospital after a short illness. He had practiced in Minot since 1952.

He was born in Buffalo, New York, January 27, 1921. He was reared in Buffalo and graduated from Canisius College there in 1943. His medical training was taken at Georgetown University, Washington, D.C., graduating in 1946. He interned in Washington, D.C., and served a year of residency at the University of Illinois and two years at the University of Minnesota. After serving in the Army Medical Corps in Alaska for two years, Dr. Shea came to Minot to be associated with the McCannel Clinic.

In Minot, Dr. Shea was a member of St. Leo's Church, the Lions Club, Knights of Columbus, Holy Name Society, Ryan Boosters, the Country Club and the Elks Lodge. He also served as a consultant on the North Dakota Cleft Palate Team, was a member of the American Board of Otolaryngologists and had served as President of the Northwest District Medical Society. He was general chairman of the Benedictine Sisters development program which began in 1964.

He married the former Gertrude Brennan on February 26, 1949. She survives, together with four children.

### GUDMUND G. THORGRIMSEN, M.D.

Dr. G. G. Thorgrimsen, formerly of Grand Forks, died February 3, 1968 at the age of 73, in Spokane, Washington, after an illness of one month. He had retired from medical practice in April of 1967, after 42 years of service. He and Mrs. Thorgrimsen had made their home in Vancouver since his retirement.

The son of a Lutheran pastor, Dr. Thorgrimsen was born at Sioux Falls, South Dakota, on May 18, 1894. He was a graduate of Luther College, Decorah, Iowa and Rush Medical College, University of Chicago, obtaining his M.D. degree in 1926. He then established his medical practice in Grand Forks where he continued until his retirement. He was a former assistant professor of embryology and histology at the University of North Dakota. He was the first state medical consultant of Federal-State Vocational Rehabilitation in 1947 and was Grand Forks County Coroner from 1961 to 1967.

Dr. Thorgrimsen was a member of the American Medical Association, the North Dakota State Medical Association, a member and past president of the Grand Forks District Medical Society, Exchange Club, Elks Lodge and a 32nd Degree Scottish Rite Mason of Acacia Lodge, A.F. and A.M. of Grand Forks.

He married the former Esther Bloomquist in Grand Forks. She survives, as do two daughters and one son.

Respectfully submitted,
(Signed) E. H. Boerth, M.D., *Chairman*
Committee on Necrology and
Medical History

## COMMITTEE ON PUBLIC HEALTH

This is to report that there were no meetings of the Committee on Public Health during 1967.

Respectfully submitted,
(Signed) Percy L. Owens, M.D., *Chairman*
Committee on Public Health

## COMMITTEE ON PUBLIC RELATIONS

The committee did not have any formal meetings this year as we were unable to get a quorum for a meeting. However, we were represented at the Communication's Institute of the A.M.A. in August of 1967. The Communication's Institute has changed a little and from big time public relation's pressure, the tone was set by Dr. Milford Rouse, President of the A.M.A. when he stated that medical public relations has to come from the patient-doctor relationship and the doctor's relationship in his community—that there is no way to buy public relations other than this and that this is the most effective of the public relations. The rest of the communication's institute was on intra professional relationships and the use of the county and district medical societies and their activities. This has never been a problem in North Dakota and so was of little value to us. However, it was interesting to note that many county and district societies in other states and more populous states consider themselves very fortunate if they have a turnout of 20% of their personnel. Concerning the meaning of the public relation's committee—if the State Society adopts the Commission form this will no doubt solve the problem of many Committee meetings and guarantee at least two meetings a year.

Respectfully submitted,
(Signed) W. M. Buckingham, M.D., *Chairman*
and
F. A. DeCesare, M.D., *Vice-Chairman*
Committee on Public Relations

## AD HOC COMMITTEE ON HEART DISEASE, CANCER AND STROKE AND COMMUNITY HEALTH PLANNING

In June, 1967, the North Dakota Medical Research Foundation was notified that they had been designated as a Region under the Regional Medical Program for Heart Disease, Cancer and Strokes and related diseases, and had been given a grant for $188,010 for the first twelve month period beginning July 1, 1967 until June 30, 1968, and that the budget of $198,459 had also been approved subject to the submission of progress reports for the year July 1, 1968, until June 30, 1969.

Doctor V. J. Fischer, President of the North Dakota State Medical Association again re-appointed the members of the subcommittee for application preparation to a new sub-committee that would represent the State Medical Association in the planning activities of the Regional Medical Program.

On August 16, 1967, a meeting of the Advisory Group was held in the School of Medicine Auditorium, Grand Forks, North Dakota, and at this meeting an Executive Committee was formed consisting of all members of the sub-committee, plus representatives from the North Dakota State Heart Association, North Dakota State Cancer Society, the North Dakota Hospital Association and the North Dakota State Nurses' Association. At this meeting the Executive Committee was given full authority to act in behalf of the Advisory Group.

On August 31, 1967, the Executive Committee met and I was elected as Chairman, Doctor Painter was elected Vice-Chairman and Doctor Amos was elected the Secretary. At this time the sub-committee acted to set up the basis under which by-laws could be developed for an Advisory Group and a program for recruitment of personnel was developed.

A second meeting of the Executive Committee was held on September 19, 1967. Two members of the National Program were present at this meeting and extended to the Committee a good deal of worthwhile information regarding any questions that had arisen. The credentials of several applicants for the position of Program Director were reviewed but none were approved. Some tentative by-laws were presented for review but were not approved. Further suggestions were made for seeking applicants for the key positions in the program.

The third meeting of the Executive Committee was held on October 30, 1967. The purpose of this meeting was to review two candidates for the position of Program Director. As a result of the interviews, Doctor Willard A. Wright was hired as Program Director, to assume his duties about December 1, 1967.

The fourth meeting of the Executive Committee was held on February 7, 1968. Doctor Wright reported his activities in the program and his proposals for the organization of planning activities. As a result of this meeting three sub-committees were formed to be composed of members of the Executive Committee and other members of the Advisory Group. These consisted of:

1. Inventory Committee—to determine method and carry out inventory of facilities and capabilities throughout the state.

2. Projects Committee—to study proposals submitted to them, screen them and make recommendations to the Executive Committee.

3. Education Committee—to collect information as to possibilities, availability, etc., and make recommendations to the Executive Committee.

It was moved, seconded and passed that a news letter be developed and mailed to all physicians and to the North Dakota Hospital Association Executive Director for his distribution.

The by-laws were reviewed and approved.

The sub-committees of the Executive Committee have now been appointed and a request has been made that they meet some time prior to the next meeting of the entire Advisory Group on April 17, 1968.

It is planned that Doctor Wright will have a presentation to bring before the House of Delegates regarding the activities leading to the development of a Regional plan for North Dakota at the House of Delegates meeting in May.

Although the progress up to this point has seemed slow and tedious, in looking back over the last five months, a great deal has been accomplished. Doctor T. H. Harwood, Program Coordinator, was successful in obtaining very fine office space for the headquarters of the Program at 1600 University Avenue, Grand Forks. The program is indeed fortunate to have acquired the services of Doctor Willard Wright, an outstanding national leader in medical administrative activities from this state, with great initiative, knowledge and experience in the ways and means of developing a plan most useful to all of us. The office is further staffed by competent Assistant Directors, Mrs. Lorraine Parker and Lt. Col. John A. Grim, USAF (Ret.), a capable Administrative Assistant, Mrs. Mildred Bonlie, and a Secretary. Doctor Wright has been active in visiting hospitals, encouraging planning activities at local levels and starting inventory activities of our regional facilities. Sub-committees have been developed to assist him in the fields of inventory of facilities and capabilities, projects review and information and education at the local levels. Computer services have been obtained through a computer consultant at the University of North Dakota, Mr. Conrad Dietz.

It is sincerely hoped and anticipated that planning activities will have reached a stage in 1968 that consideration could be given an application for an operational grant in areas where obvious need exists within this region.

The Chairman of this committee suggests that the House of Delegates prepare a resolution authorizing the North Dakota Medical Research Foundation, (the Council of the North Dakota State Medical Association), to approve applications for operational grants, if the need becomes apparent during the development of the plan.

Respectfully submitted,
(Signed) Lee A. Christoferson, M.D., *Chairman*,
Ad Hoc Committee on Heart Disease,
Cancer and Stroke and Community
Health Planning

## REPORT OF THE REGIONAL MEDICAL PROGRAM

In October of 1966, Congress enacted Public Law 89-239—"The Heart, Cancer and Stroke Amendments of 1965."

The title of the law is: Education, Research, Training and Demonstrations in the fields of Heart, Cancer, Stroke and Related Diseases.

The law was a direct result of the report of the President's Commission on heart disease, cancer and stroke, Dr. M. DeBakey, Chairman. The report was presented in December, 1964, as "A National Program to Conquer Heart Disease, Cancer and Stroke."

The main thesis of this report was that advances in the treatment of these diseases were not being made available, either in sufficient degree or with sufficient rapidity to patients.

The report recommended among other things, that "Centers of Excellence" be formed in connection with established medical schools. These centers would then develop a "Medical Complex" serving a large community or medical service areas.

Subsequently, a bill was introduced into Congress embodying these and similar ideas.

Due to the influence of the American Medical Association and many others, the bill was radically altered by the Congress, so that the "Centers of Excellence" concept was abandoned.

Instead, the law as passed, states that its purpose is:

1. To provide grants for the purpose of development of regional cooperative arrangements between proper institutions and invididuals to make available to patients the latest advances in the diagnosis and treatment of heart disease, cancer, stroke, and related diseases, and by these means to improve generally, health manpower and facilities.

### DEVELOPMENT OF PROGRAM IN NORTH DAKOTA

At the annual meeting of the State Medical Association in Fargo, May 19, 1966, the House adopted a recommendation that the Association form a non-profit foundation for the purpose of applying for a planning grant under the act.

A committee chaired by Dr. Lee Christoferson, was appointed by the then President Toomey, and assisted in forming a foundation and drawing up the grant application.

The North Dakota Medical Research Foundation was formed and a certificate of incorporation issued by the North Dakota Secretary of State on September 2, 1966.

The Board of Directors are the same men as are members of the Council of the North Dakota Medical Association.

Dr. Theodore Harwood was named as coordinator of the program and the medical school as the fiscal agent.

The grant was approved July 31, 1967, naming the North Dakota Medical Research Foundation as grantee; Dr. T. H. Harwood as program coordinator; and the University of North Dakota as the fiscal agent, in the amount of $188,010.00.

As a necessary part of the grant application, an Advisory Committee Representative of Broad Professional and Community interests was formed and continues to function as Advisory to the program.

The Advisory Committee functions through an Executive Committee. Members of the Executive Committee of the Advisory Group are as follows: Doctors: L. A. Christoferson, Chairman; R. C. Painter, Vice-Chairman; James R. Amos, Secretary; A. Malcolm Cameron; J. D. Craven; P. Roy Gregware; E. O. Hieb; D. A. Nicely; J. W. Goven; R. D. Story; and Robert Ulmer, together with Mr. Howard Semingson, Administrator; Mrs. Arnold Jacobson, Cancer Society; Mrs. Frank Roberts, Nursing Association; and Mr. Les Rohde, Heart Association.

The present Administrative Staff consists of: Dr. T. H. Harwood, Program Coordinator; Dr. W. A. Wright, Program Director; Mrs. Lorraine Parker, Assistant Director; Lt. Col. John Grim, USAF (Ret'd.), Assistant Director; Mr. Con Dietz (part time) Statistical and Computer Services; Mrs. Mildred Bonlie, Administrative Assistant and Mrs. Ellen Boekes, Secretary.

### PURPOSE OF THE PROGRAM

Our basic purpose is not so much to provide services as it is to provide a mechanism of communication between individuals, organizations, and institutions so that coordination of activities can be achieved.

The goal is to encourage a more unified effort to provide the highest quality of medical care in the most effective, efficient manner possible, with resources now available or which can be made available, and as close to home as possible for the patients.

The goal is to be achieved by using a maximum of local self-determination of resources, needs and capabilities, with the most effective use of existing facilities and services without, in any way, interfering with prevailing methods of delivery and payment for services.

Accomplishment must come as a result of institutional, organizational, local community, area, state and regional planning. Success will only result if physicians assume a leading role in all health planning activities.

The A.M.A. House of Delegates at the last clinical session, adopted and commended report A of the Council on Medical Service urging physicians to provide active participation in, and direction of, health planning programs.

The report states in part:

"That the planning, organization, and distribution of health facilities and services are a prime responsibility of organized medicine—a responsibility that should be given a higher priority among the various activities of medical societies—state and local.

That the "key" to effective comprehensive planning of health facilities and services is in the caliber of the long range planning activities of individual institutions and the coordination of individual plans at the communtiy level.

(Incidentally, we are informed by the Joint Commission on Accreditation of Hospitals, that long range planning will be required for accreditation.)

The A.M.A. then recommends that state and component medical societies place increased emphasis on the following activities:

1. Liaison and representation with all governmental and voluntary agencies involved in the implementation of P.L. 89-239 and P.L. 89-749. (The Regional Medical Program and the Comprehensive Health Planning Act.)

2. Promotion of, and participation in, voluntary comprehensive planning of health facilities and services.

3. To provide guidance and advice on methods of participation.

4. Promotion of participation by members of the hospitals medical staffs in the long range planning of the hospitals they attend, and coordination of institutional planning with community wide planning."

### METHOD OF OPERATION OF REGIONAL MEDICAL PROGRAM

We plan to:

Provide stimulation and encouragement for the organization and operation of institutional, organizational, consumer, area wide and state and regional planning groups.

We have prepared and will make available a manual on the organization and operation of area wide planning groups.

We will provide:

A. Additional information and staff assistance where possible.

B. Advisory and Consultant services to institutions, organizations, and individuals where needed, especially in the area of more highly specialized services.

C. Advice and direction for those who wish to develop special projects for which grants may be available.

D. Education:

The major efforts of this program, at least, initially, will undoubtedly be in the broad, general area of the education of health services professionals. Again, we will encourage existing organizations and institutions to scrutinize their present activities with emphasis on increasing and making available more educational opportunities. The best possibilities seem to be in better coordination of programs so that scarce teaching talent and other resources may be used more effectively.

E. Finally, we are collecting and tabulating all the information we can as to the present resources, future needs and abilities to provide these in North Dakota.

The program may be considered as in the nature of a catalytic agent to the end that there be the best possible utilization of health care facilities and services and that we direct our activities so that they may be of the highest quality and available to all those who need them.

We hope that the program will function as a continual and simultaneous process in which we inventory and study our present resources, plan for their most effective use, and develop new projects to meet demonstrated needs.

It is not now, and well may never be, our intention to develop a master plan.

The medical profession has assumed or has had thrust upon it, a new area of social responsibility. I am convinced that if we are willing to devote the time, effort, and good will required, there will be a mutual benefit for ourselves and the people of North Dakota.

Respectfully submitted,
(Signed) W. A. Wright, M.D., *Program Director,*
Regional Medical Program

## COMMITTEE ON AGING AND REHABILITATION

Due to lack of a quorum, no meeting of the Committee on Aging and Rehabilitation has been held.

Respectfully submitted,
(Signed) Harold W. Evans, M.D., *Chairman,*
Committee on Aging and Rehabilitation

## COMMITTEE ON CANCER

The Committee on Cancer has had no formal meeting during 1967-68, but acting on in an advisory capacity. No immediate and pressing problems have been called to our attention. We have been observing with interest the work of the North Dakota Division of the American Cancer Society since the appointment of William Irwin, as Executive Director of the North Dakota Division. He brings to North Dakota the newer thinking of a state program from the National Office. Various local charters were revoked, not on a discriminatory basis, but merely to establish the local cancer unit as a working organization. We wish them the best of everything in their future course. We note that Dr. John Elsworth of Jamestown, North Dakota, has completed his term as President of the North Dakota Division, and recently appointed as President was Dr. John Gillam of Fargo, North Dakota.

Of interest to cancer is a recent establishment of the Regional Medical Program in Grand Forks headed by Dr. Harwood, and Dr. W. A. Wright. The object of this program is the establishment in North Dakota of the Cancer, Heart, and Stroke program. We are not aware at the time of what importance cancer will assume in this program, but most likely the program will lean toward lay and professional education, establishment of Pap smear clinics, chest x-rays, and possibly a program of colon cancer examinations. We have received no specific information, but understand that another phase of the program, namely that of the establishment of cancer detection centers, is included in the program. This probably is in the distant future, especially in lower populated states, such as North Dakota.

If any problems in cancer control should arise in your area, please let your nearest committee member know of this, and we will do our best to give you any help or information possible.

Respectfully submitted,
(Signed) Carroll M. Lund, M.D., *Chairman,*
Committee on Cancer

*To be continued in the September issue*

# Book Reviews . . .

## Antilymphocytic Serum: Ciba Foundation Study Group 29

*edited by* G. E. W. WOLSTENHOLME, F.R.C.P., *and* MAEVE O'CONNOR, *165 pp., ill., Little, Brown & Co., Boston, 1967.*

This, the 29th in the series of the proceedings of the Ciba Foundation Study Groups, is most timely. The case of the "heart man" in South Africa has brought into the public eye an area in which tremendous advances have been made—advances so startling that a large segment of even the medical and allied professions are only vaguely aware of them.

The book stems from the statement made in 1963 that the lymphocyte is the "immunologically competent cell." The papers discuss a variety of the aspects of antilymphocytic therapy including the use of heterologous antilymphocyte globulin in human renal homotransplantation; antibody-induced lymphocyte transplantation in vitro; in vivo and in vitro properties of antilymphocytic serum, its mode of action, and its effects on primates, mice, dogs, and man; and the suppression of secondary disease following its use in foreign bone marrow grafting. Antilymphocyte serum would still seem to be not only the most powerful but also the only true immunosuppressive agent. It may have the characteristics of a "magic bullet," selectively suppressing only the unwanted immune responses.

As with other monographs in this series, the speakers are all outstanding authorities. Each paper has a summary and a bibliography plus the discussion created by the paper, reported verbatim. Since all the participants are well versed in the field, these discussions are as interesting and informative as the original presentations.

An additional feature, which has not always appeared in the other books in this series, is a general discussion at the end. This was led by the chairman, J. H. Humphrey of the National Institute for Medical Research, London, who posed a series of questions. The discourse evoked forms an exciting commentary on the whole symposium.

A good index and the handy pocket size make this volume most usable. It is not for those with only a desultory interest in the subject but it is a *must* for the researcher and surgical specialist in this growing field. Organ transplants are entirely possible and may soon be commonplace. Even the brain may be transplanted but the techniques for this operation will undoubtedly be perfected long before the ethical question—is the donor the recipient or vice versa?—is answered.

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## Claude Bernard and Experimental Medicine

*edited by* FRANCISCO GRANDE *and* MAURICE B. VISSCHER, *120 pp., ill., Schenkman Publishing Co., Inc., Cambridge, Mass., 1967. $8.95*

The seventy-fifth anniversary of the founding of the medical school of the University of Minnesota and the centenary of the publication of Claude Bernard's "An Introduction to the Study of Experimental Medicine" fell in the same year. As a result of this coincidence a symposium in commemoration of the centenary was also a

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part of the university's anniversary celebration. The material presented at the symposium makes up a large portion of this volume. It is for the final part, however, the first English translation of Bernard's "Cahier Rouge," that Bernard fans will be most grateful.

The translators of the "Red Notebook" claim that it is "more than the first draft of any of Bernard's subsequent books. It is one of the most intimate records of the problems that occupied Bernard in these ten years. It is a form of diary in which he wrote not only about things he had seen that day in the laboratory, about experiments or hypotheses that these had suggested, but also about his constant search to express the experimental method in physiology, and to show how it related to other sciences. . . . Bernard's reading is not of the past; it is not obsolete. Few scientists of a hundred years ago can be given similar credit."

The other chapters grew out of addresses given by distinguished doctors, scientists, and professors in Minneapolis in 1965 at the symposium, which was supported by a grant of funds from the Louis W. and Maud Hill Family Foundation. The contributions are from several different countries.

The editors of this volume, Dr. Francisco Grande and Maurice B. Visscher, are Professors, Department of Physiology, University of Minnesota. The Translators of the *Cahier Rouge*, H. H. Hoff, Lucienne Guillemin, and Roger Guillemin are members of the Department of Physiology, Baylor University College of Medicine.

JAMES B. CAREY, SR., M.D.
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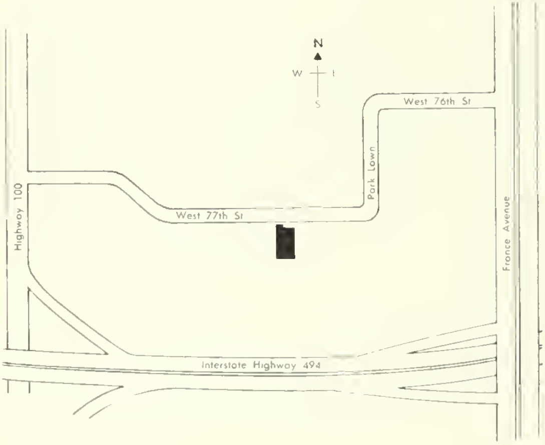

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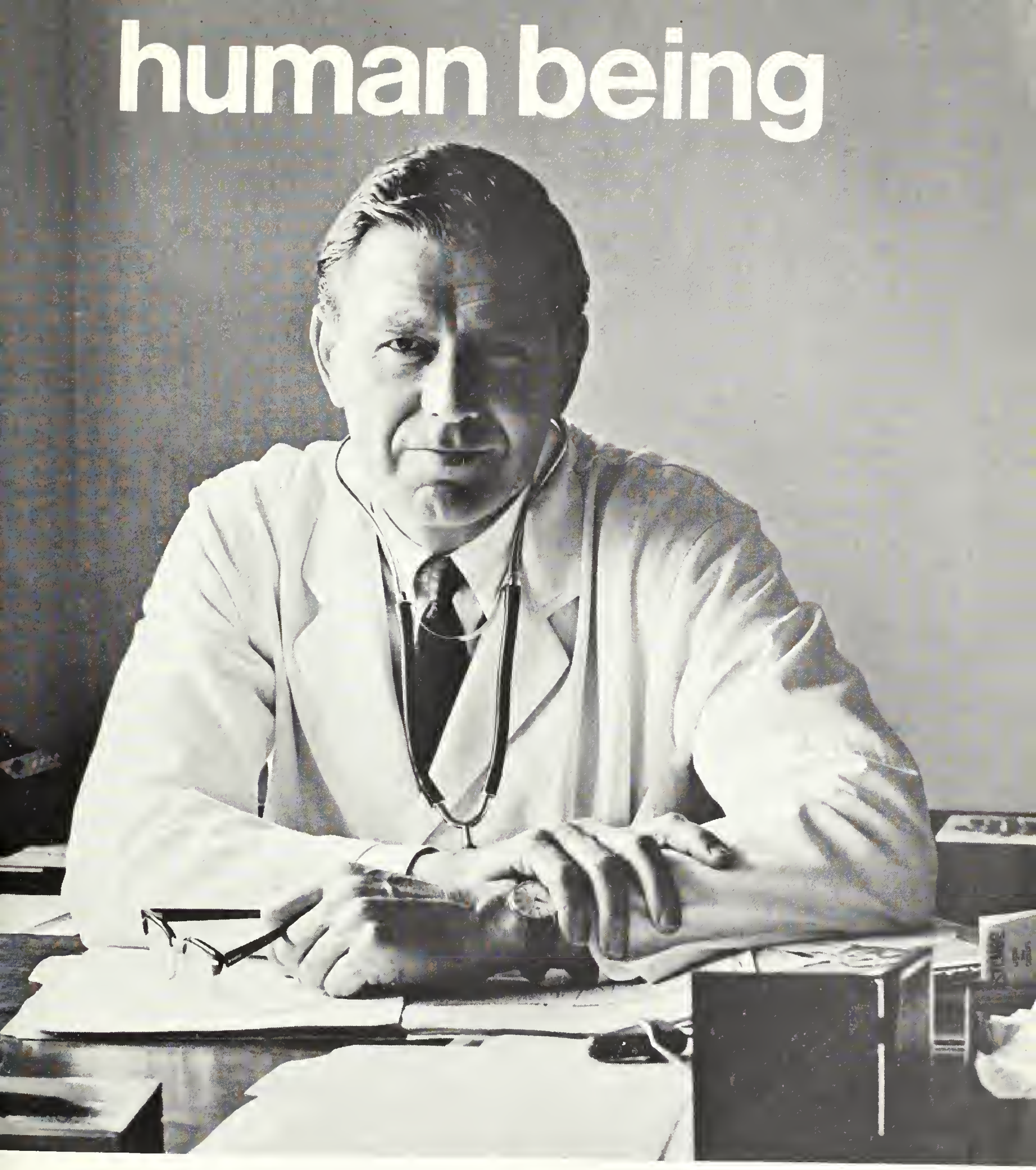

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# In the complex picture of moderate to severe anxiety...

## there is a new reason for prescribing Mellaril (Thioridazine HCl)

## effectiveness in mixed anxiety-depression

Long recognized for its usefulness in the treatment of moderate to severe anxiety, Mellaril is now also known to be effective against mixed anxiety-depression.

Often the symptoms of anxiety states are difficult to sort out—even with the most careful probing. The patient may manifest symptoms of agitation, restlessness, insomnia, somatic complaints. But what of the depression that may be mixed in the total picture? It is reassuring to know that Mellaril may be prescribed—with strong possibilities of success—when there is anxiety alone or a mixture of anxiety and depression.

*Before prescribing or administering, see Sandoz literature for full product information, including adverse reactions reported with phenothiazines. The following is a brief precautionary statement.*
**Contraindications:** Severe central nervous system depression, comatose states from any cause, hypertensive or hypotensive heart disease of extreme degree.
**Warnings:** Administer cautiously to patients who have previously exhibited a hypersensitivity reactio (e.g., blood dyscrasias, jaundice) to phenothiazines. Phenothiazines are capable of potentiating central nervous system depressants (e.g., anesthetics, opiates, alcohol, etc.) as well as atropine and phosphorus insecticides. During pregnancy, administer only when necessary.
**Precautions:** There have been infrequent reports of leukopenia and/or agranulocytosis and convulsive seizures. In epileptic patients, anticonvulsant medication should also be maintained. Pigmentary retinopathy may be avoided by remaining within t recommended limits of dosage. Administer cautiously to patients participating in activities requiring complete mental alertness (e.g., driving). Orthostatic hypotension is more common in femal than in males. Do not use epinephrine in treating drug-induced hypotension. Daily doses in excess o 300 mg. should be used only in severe neuropsychiatric conditions.
**Adverse Reactions:** *Central Nervous System*—Drowsiness, especially with large doses, early in treatment; infrequently, pseudoparkinsonism and other extrapyramidal symptoms; nocturnal confusion, hyperactivity, lethargy, psychotic reactions, restlessness, and headache. *Autonomic Nervous System*—Dryness of mouth, blurred visio constipation, nausea, vomiting, diarrhea, nasal stuffiness, and pallor. *Endocrine System*—Galactorrhea, breast engorgement, amenorrhea, inhibition of ejaculation, and peripheral edema. *Skin*—Dermatitis and skin eruptions of the urtica type, photosensitivity. *Cardiovascular System*—Changes in the terminal portion of the electrocardiogram have been observed in some patients receiving the phenothiazine tranquilizer including Mellaril (thioridazine hydrochloride). While there is no evidence at present that these changes are in any way precursors of any signific disturbance of cardiac rhythm, several sudden ar unexpected deaths apparently due to cardiac arre have occurred in patients previously showing electrocardiographic changes. The use of periodi electrocardiograms has been proposed but would appear to be of questionable value as a predictiv device. *Other*—A single case described as parotid swelling.

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**Adverse Reactions:** Drowsiness; dry mouth; nasal congestion; constipation; amenorrhea; miosis; mild fever; weight gain; hypotensive effects, sometimes severe with I.M. administration; epinephrine effects may be reversed; dermatological reactions; parkinsonism-like symptoms on high dosages (in rare instances, may persist); lactation and moderate breast engorgement (in females on high dosages); and less frequently, cholestatic jaundice (use cautiously in patients with liver disease). Adverse reactions occurring rarely, include: mydriasis; agranulocytosis; skin pigmentation; epithelial keratopathy; lenticular and corneal deposits (after prolonged substantial doses).

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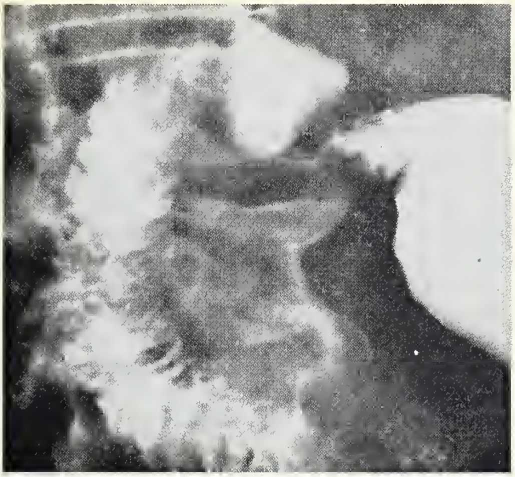

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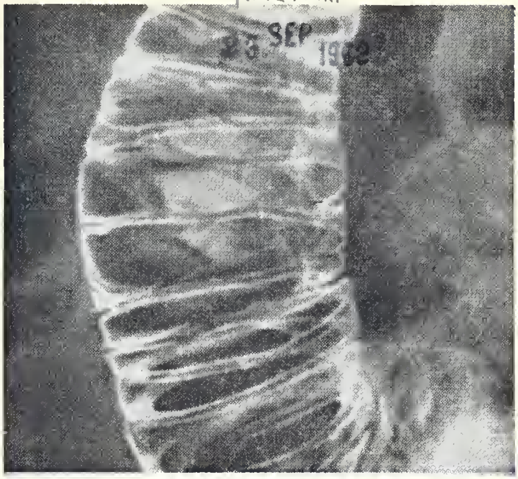

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In the hypotonic duodenograph[1,2] reproduced above, the gastrointestinal tract was relaxed with Pro-Banthīne. The duodenum was intubated. Pro-Banthīne in a dose of 60 mg. intramuscularly was used to assure prompt aperistalsis and double-contrast visualization was achieved with ordinary barium and air.

The same pharmacologic efficiency has proved of pronounced value in such conditions as: *peptic ulcer, pylorospasm, biliary dyskinesia, functional hypermotility and irritable colon.*

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*Contraindications:* Glaucoma; severe cardiac disease.

*Precautions:* Since varying degrees of urinary hesitancy may occur in elderly males with prostatic hypertrophy, this should be watched for in such patients until they have gained some experience with the drug. Although never reported, theoretically a curare-like action may occur with possible loss of voluntary muscle control. Such patients should receive prompt and continuing artificial respiration until the drug effect has been exhausted.

*Side Effects:* The more common side effects, in order of incidence, are xerostomia, mydriasis, hesitancy of urination and gastric fullness.

*Dosage:* The maximal tolerated dosage is usually the most effective. For most *adult* patients this will be four to six 15-mg. tablets daily in divided doses. In severe conditions as many as two tablets four to six times daily may be required. Pro-Banthīne (brand of propantheline bromide) is supplied as tablets of 15 mg., as prolonged-acting tablets of 30 mg. and, for parenteral use, as serum-type vials of 30 mg. The parenteral dose should be adjusted to the patient's requirement and may be up to 30 mg. or more every six hours, intramuscularly or intravenously.

(1) Bilbao, M. K.; Frische, L. H.; Rösch, J., and Dotter, C. T.: Hypotonic Duodenography, Scientific Exhibit, Radiological Society of North America, Chicago, Nov. 27–Dec. 2, 1966.

(2) Bilbao, M. K.; Frische, L. H.; Dotter, C. T., and Rösch, J.: Hypotonic Duodenography, Radiology, 89:438-443 (Sept.) 1967.

(3) Cf. also, Liotta, D.: Pour le diagnostic des tumeurs du pancréas: la duodénographie hypotonique, Lyon chir. 50:445-460, (May-June) 1955.

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**Fatal cases of aplastic anemia have been reported following treatment with Tegretol. Agranulocytosis, thrombocytopenia and transitory leukopenia have also been observed. Complete blood and platelet counts should be done prior to and at regular intervals during treatment with the drug (see recommendations under "Important Note and Precautions") to help in the early detection of serious bone marrow injury. Abnormalities in initial blood tests should rule out use of the drug. Also, patients should be made aware of such early toxic signs of a potential hematologic problem as fever, sore throat, mouth ulcers, easy bruising and petechial or purpuric hemorrhage. Should such signs appear, the patient should be advised to discontinue the drug and to report to the physician immediately.**

**Indication** Tegretol is indicated in the treatment of the pain associated with true trigeminal neuralgia. It is not a simple analgesic and should never be administered for relief of trivial facial aches or pains.

**Contraindication** Do not use in those with a known sensitivity to any tricyclic compound or in those being treated with M.A.O.I. agents. As long a period as possible should elapse before using Tegretol in patients who have been treated with M.A.O.I.'s, with a minimum of 7 days. In such cases, initial dosage should be low and the patient's reaction to gradual increments closely observed.

**Important Note and Precautions** Familiarity with the clinical symptoms which lead to an accurate diagnosis of true trigeminal neuralgia and with the complete prescribing information, careful patient selection, a thorough examination before treatment and close patient supervision throughout the treatment period are essential to the safe and effective use of this drug.

Where feasible, Tegretol should not be used in conjunction with any potent drug which may increase the possibility of toxic reactions.

*In pregnancy,* the drug should not be prescribed during the first trimester and thereafter only to patients in whom the clinical situation warrants the potential risk. It should not be administered to nursing mothers.

Patients with increased intraocular pressure should be closely observed during treatment with this drug because of its anticholinergic effect. Because of the drug's relationship to other tricyclic compounds, the possibility of activation of latent psychosis and, in the elderly, of confusion or agitation, should be considered.

Dizziness and drowsiness may occur and patients should be cautioned about the hazards of operating machinery or automobiles and of engaging in other hazardous tasks.

**Use cautiously in patients with a history of coronary artery disease, organic heart disease, congestive failure or liver disease.**

**Before initiating therapy, the following laboratory procedures should be performed:**

1. Complete blood and platelet counts which, if abnormal, should rule out the use of the drug.
2. Baseline evaluations of liver function.

**During treatment with Tegretol, the following laboratory procedures should be performed:**

1. Complete blood and platelet counts should be done at intervals of one week during the first month of drug treatment, every two weeks during the second and third months, and at monthly intervals thereafter for as long as the patient is taking the drug. A trend toward a decreasing white blood cell count should suggest a dosage reduction and more frequent laboratory and clinical evaluations. Should this trend continue, the drug should be discontinued.
2. Liver function tests must be performed at regular intervals during treatment with this drug since liver damage may occur during therapy. The drug should be discontinued immediately in cases of aggravated liver dysfunction or active liver disease.
3. Periodic eye examinations, including slit-lamp, funduscopy and tonometry, are recommended for patients being treated with this drug since many phenothiazines and related drugs have been shown to cause eye changes.
4. Complete urinalysis and BUN should be done on patients treated with Tegretol because of observed renal dysfunction.

**Adverse Reactions** Dizziness, drowsiness, unsteadiness on the feet, nausea, vomiting, aplastic anemia, transitory leukopenia, agranulocytosis, eosinophilia, leukocytosis, thrombocytopenia, purpura, abnormalities in liver function tests, cholestatic and hepatocellular jaundice, urinary frequency, acute urinary retention, oliguria with elevated blood pressure, albuminuria, glycosuria, elevated BUN, microscopic deposits in the urine, impotence, disturbances of coordination, confusion, headache, fatigue, blurred vision, transient diplopia and oculomotor disturbances, speech disturbances, abnormal involuntary movements, peripheral neuritis and paresthesias, depression with agitation, talkativeness, nystagmus, tinnitus, paralysis and other symptoms of cerebral arterial insufficiency, pruritic and erythematous rashes, urticaria, Stevens-Johnson syndrome, photosensitivity reactions, alterations in skin pigmentation, exfoliative dermatitis, alopecia, diaphoresis, recurrence of thrombophlebitis, erythema multiforme and nodosum, aggravation of disseminated lupus erythematosus, gastric distress, abdominal pain, diarrhea, constipation, anorexia, dryness of the mouth and pharynx, glossitis, stomatitis, fever, chills, adenopathy, lymphadenopathy, aching joints and muscles, leg cramps, conjunctivitis, left ventricular failure, aggravation of hypertension, hypotension, syncope and collapse, edema, aggravation of coronary artery disease and congestive heart failure. (Whether these cardiovascular effects are drug-related is not known. However, some of these complications have resulted in fatalities.) The necessity for discontinuing the drug should be dictated by the gravity and severity of the adverse reactions.

**Dosage and Administration** The drug should always be taken with meals, if possible.

*Initial:* One-half tablet (100 mg.) b.i.d. on the first day. Thereafter, the dose should be increased in one-half tablet (100 mg.) increments every 12 hours until freedom from pain is achieved. To relieve pain, between 200 mg. and 1200 mg. per 24 hours may be necessary.

*Maintenance:* Initial control of pain can be maintained in most patients with a dose of 400 mg. to 800 mg. daily. Maintenance doses may range between 200 mg. and 1200 mg. daily.

At least once every 3 months during treatment period attempts should be made to discontinue the drug or to reduce the dose to the minimum effective level.

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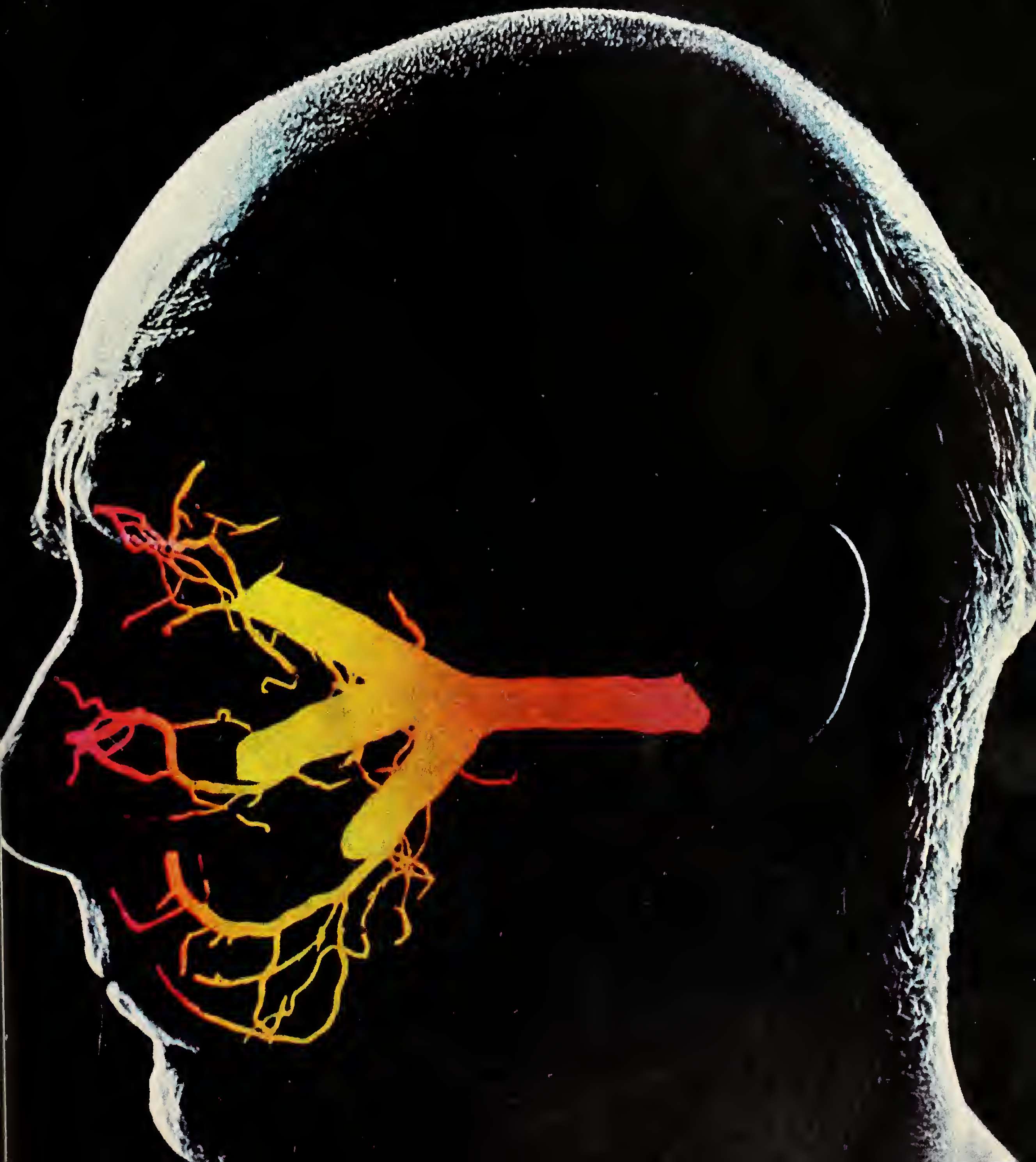

The Journal-Lancet Volume 88, No. 9, SEPTEMBER 1968

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THE JOURNAL-LANCET, a publication of COWLES COMMUNICATIONS, INC., is published monthly by LANCET PUBLICATIONS, INC., 4015 West 65th Street, Minneapolis, Minnesota 55435. Telephone 927-4471, area code 612. Title registered at U.S. Patent Office. Printed in U.S.A. Subscriptions: $5 a year, 50 cents a copy (special issues $1 a copy). Louis M. Cohen, Publisher; Donald A. Mullan, Associate Publisher.

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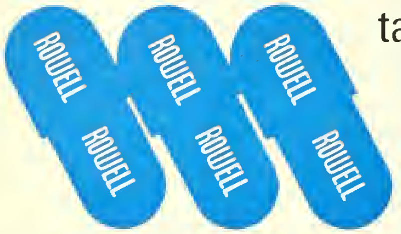

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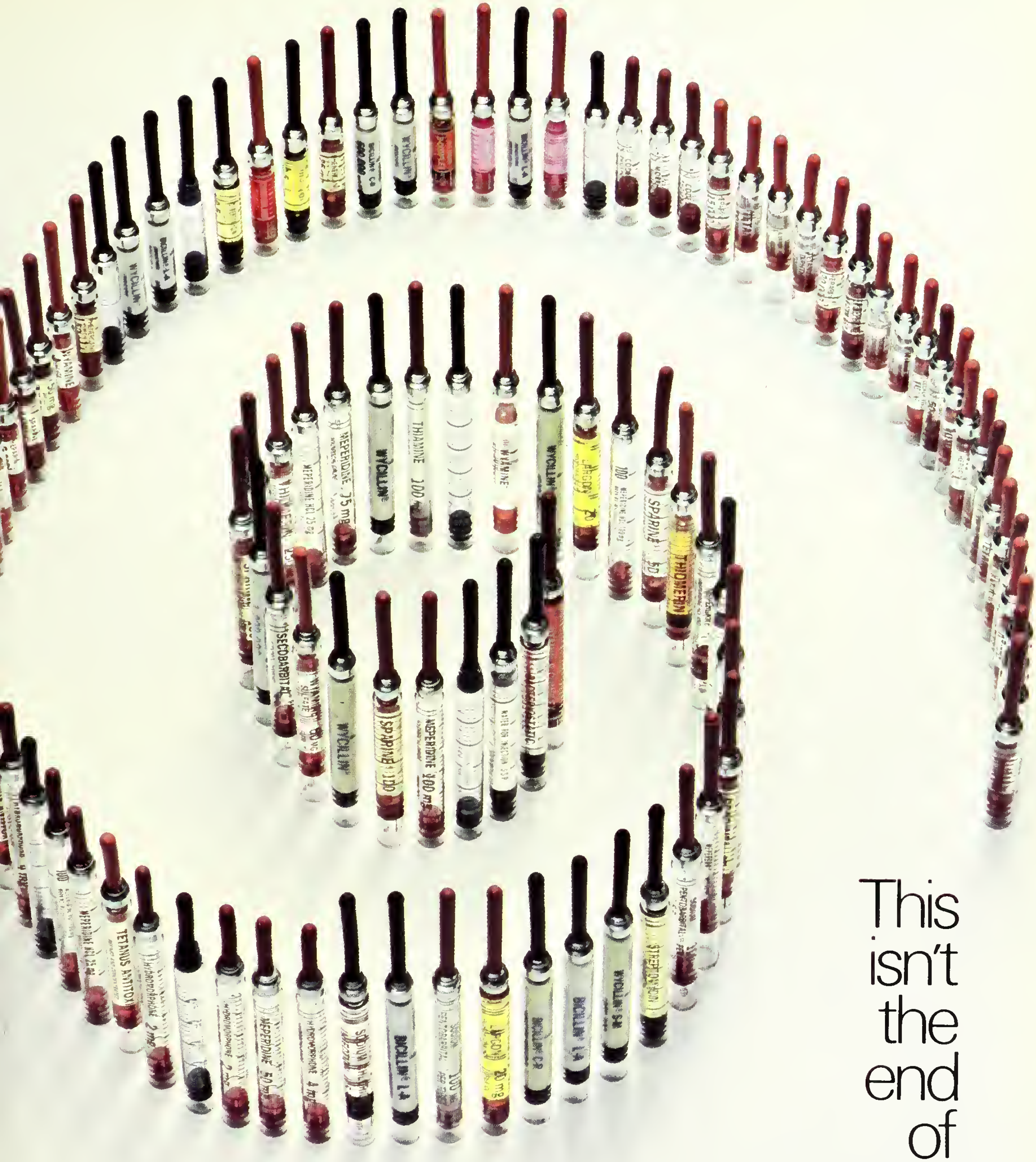
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# Surgery for Intractable Ulcer

REX E. WIEDERANDERS, M.D., and
ROBERT J. OLSON, M.D.
Williston

VAGOTOMY AND PYLOROPLASTY as the surgical treatment for intractable duodenal ulcer appears to offer several advantages over other surgical approaches. By not excising a portion of the stomach, its storage function is unimpaired and there should be less tendency to the dumping syndrome. As the pyloroplasty merely widens the existing gastric outlet without creating a new opening, as does gastroenterostomy, the stomach should empty more easily. Circus movement of food from the alkaline duodenum back into the gastric antrum with secondary antral stimulation is avoided, thus lessening the possibility of gastric ulcer formation, and such entities as the afferent loop syndrome will not occur.[1]

With these thoughts in mind, vagotomy with pyloroplasty was adopted as the operation of choice, and over a five-year period we have operated on 38 patients. All surgery and all follow-up visits have been done by 1 investigator. Admittedly this leads to bias, but the same bias is operative in the evaluation of each case. Thirty-three of these patients have been seen and examined within the last two months. One, a policeman, died as a result of gunshot injuries while trying to apprehend a felon and 4 have been contacted by letter. The policeman lived two years after his surgery and had no ulcer symptoms at that time.

The 38 patients (Table 1) consist of 30 men whose age averaged 47 years at the time of surgery and 8 women with an average age of 52 years. An average follow-up of 2.7 years is not enough time to rigidly evaluate any procedure and these patients may well worsen with the passage of time, but the encouraging results to date prompt this report.

The indications for surgery (Table 2) are quite standard; most of the patients reported persistent epigastric pain unrelieved by alkalies or anticholinergics. The 13 patients undergoing

TABLE 1

PATIENTS COMPRISING SERIES

| | *No. of patients* | *Average age (years)* |
|---|---|---|
| Men | 30 | 47 (25-69) |
| Women | 8 | 52 (30-64) |
| Total | 38 | |
| Average follow-up since surgery | | 2.7 years (1-4.6 ) |

TABLE 2

INDICATIONS FOR SURGERY

| | *No. of patients* | *Years existing prior to surgery* |
|---|---|---|
| Intractable pain | 21 | 11 (3-35) |
| Hemorrhage | 13 | 8 (2-20) |
| Grams of hemoglobin on admission 8.0 (6.6-10.9) | | |
| Units of blood given 8 (3-27) | | |
| Perforation | 1 | 25 |
| Obstruction | 2 | (10-23) |
| Allergy to anticholinergics | 1 | 2 |

---

REX E. WIEDERANDERS *is a surgeon with the Harmon Park Clinic, and* ROBERT J. OLSON *is a consultant radiologist in Williston.*

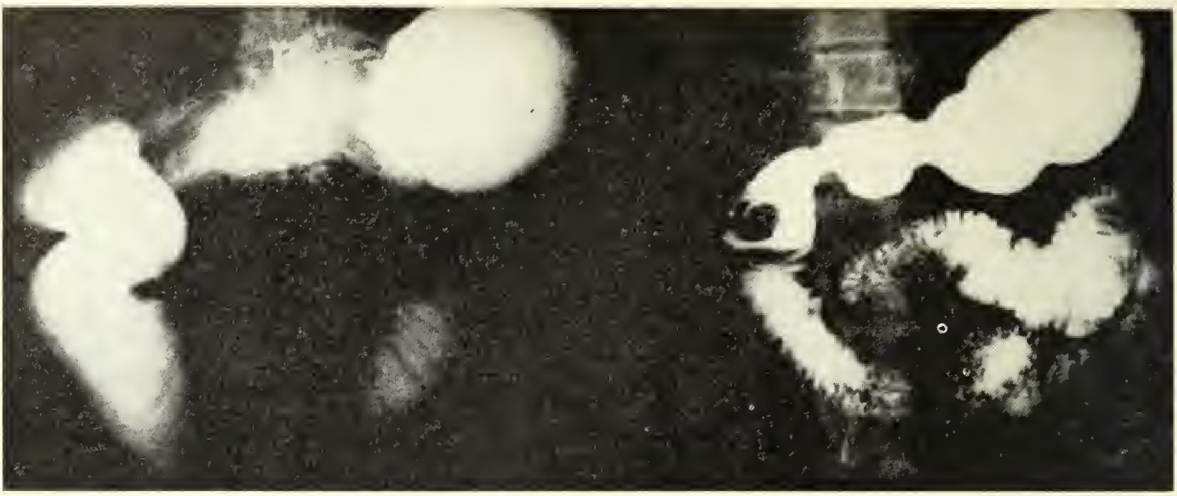

Fig. 1. The film on the left, taken after vagotomy and gastroenterostomy, shows obvious obstruction at the duodenojejunal junction, apparently due to the gastrojejunostomy. On the right, after pyloroplasty, there is no obstruction. Note the peculiar pseudotumor filling defect in first part of duodenum. Deformities such as this are seen quite regularly after pyloroplasty and apparently are not significant.

surgery for hemorrhage had all bled at least twice before their most recent episode and all had had persistent pain as well. Two of them were actively bleeding at the time of surgery and required ligature of the ulcer base.[2] The remaining 11 had stopped bleeding. The number of units of blood given preoperatively is an indication of the severity of their hemorrhage and of the rather timid attitude we initially had toward this procedure. One patient was operated on in the face of an acute perforation (Case 1). Two patients were almost completely obstructed. The highly unusual situation of anticholinergic allergies was confirmed by trying several different drugs of this type and by skin testing by our consultant dermatologist.

Prior therapy in all these patients was an intensive course of diet, anticholinergics, and antacids. Most of these patients were hospitalized during this treatment to assure accurate drug intake. Two patients had gastric freezing, 1 six months and 1 a year prior to surgery. Both had prompt recurrences. One patient was treated with vagotomy and gastroenterostomy one year before her final surgery (Fig. 1). In this period she lost 40 lb. of weight secondary to distension of the stomach and afferent loop. This anastomosis was taken down, the bowl and stomach repaired, and pyloroplasty done. She has subsequently regained her lost weight and considerably more.

The operation is routinely done through a

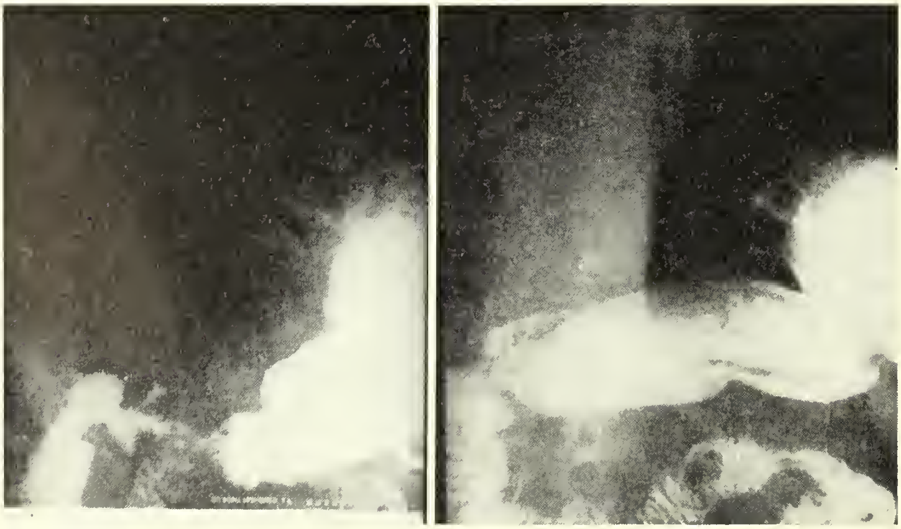

Fig. 2. The preoperative film on the left shows severe duodenal deformity and evidence of active ulcer. On the right, the postoperative film shows an adequate pyloroplasty in a clinically well patient. Note the small filling defect on the greater curve of the body; we attribute this to the previous gastrostomy.

midline incision extending from the xiphoid to the umbilicus, more room not being needed even in very obese patients. The left lobe of the liver is freed from the diaphragm and held to the right, and the peritoneum overlying the esophagus is opened. With a finger around the esophagus, traction is made causing the vagi to pull up tightly and thus be easily located. A piece of each nerve is removed for pathological verification and the untied ends allowed to retract. The hiatus is checked for hernia and if one is found it is repaired with No. 1 silk; if not, the peritoneum is closed with chromic catgut. The pylorus is then cut through with a longitudinal incision at least 3 in. long, centered on the pylorus. If there is extensive scarring the duodenum is mobilized by Kocher's maneuver and a Finney pyloroplasty is done. If the scar is not excessive the pyloric opening is closed transversely with a continuous inverting Connell suture, reinforced with interrupted 4-0 black silk Lembert sutures. This 2-layer closure departs from the method of Weinberg[1] but we do not feel that it encroaches on the lumen. If the patient is bleeding actively, the first concern is the pylorus; the vagotomy is done next. Just prior to closing the wound, a No. 24, 5 cc. Foley catheter is brought through a stab wound in the left upper quadrant and introduced into the body of the stomach through a Stamm-type gastrostomy. The gastrostomy is sutured to the body wall with 3 or 4 silk sutures. This catheter is connected to a drainage tube and suction is used only if absolutely necessary. One case shows a defect which we feel is secondary to this tube as it occurs at the tube site (Fig. 2).

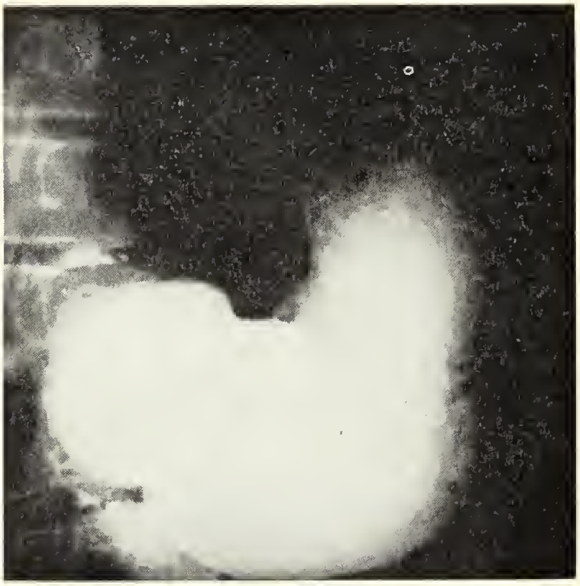

Fig. 3. Two years after surgery the stomach is still somewhat dilated and no peristalsis was seen at fluoroscopy.

TABLE 3

MILLIEQUIVALENTS OF FREE ACID PER TWELVE-HOUR, OVERNIGHT SAMPLE

| *Preoperative* | *Postoperative* |
|---|---|
| 55 | 24 |
| 90 | 10 |
| 77 | 6 |
| 68 | 15 |
| 36 | 4 |

Average preoperative acid on 34 patients, excluding patients with severe hyperchlorhydria—34(12-90)

TABLE 4

POSTOPERATIVE COMPLICATIONS

| | |
|---|---|
| Diarrhea | |
| Less than one month | 20 |
| Up to one year | 5 |
| Pneumonia | |
| Lobar | 1 |
| Pneumonitis | 1 |
| Dumping | |
| Slight | 1 |
| Severe | 1 |
| Gastric ulcer | |
| Six days postoperative | 1 |
| Failure of pyloroplasty to open | 1 |
| Prolonged gastric atony | 1 |

A Levin tube was used in every case where it was feasible to obtain a twelve-hour, overnight gastric specimen prior to surgery; this was analyzed for free and combined acid. The purpose of this is primarily to find those cases of hyperchlorhydria of such a level to indicate Zollinger and Ellison's syndrome.[3,4] One such case is included in this series but is not shown on Table 3 since the amount of acid secreted makes him quite distinct from the others described here. Thirty-four patients, then, had an average of 34 mEq. of free hydrochloric acid in their overnight specimens. On the fourth postoperative day the gastrostomy tube of 5 patients was connected to suction overnight for twelve hours and a postoperative acid value thus obtained. As Table 3 shows, there is a profound decrease in acid following this operation.

Pneumonia and phlebitis following surgery are avoidable and can be combated by walking and coughing. The 2 cases we had were not severe and responded quickly to inhalation therapy and antibiotics but they should not have occurred.

Tyloxapol (Alevaire®) and Isoproterenol hydrochloride (Isuprel®) are excellent prophylactic agents against such pneumonia, especially in the patient who smokes. Diarrhea of 2 to 3 watery stools per day is almost a constant postoperative occurrence. In 5 patients (Table 4) it persisted up to one year after surgery but did not require drug therapy and then subsided completely. The slight symptoms of dumping noticed by 1 patient resolved completely in six months while the patient with severe dumping (Case 1) developed this following a secondary gastric resection. He is also the patient whose pyloroplasty failed to open and is reported in detail below. One patient has gastric atony two years after surgery (Fig. 3), retaining gastric fluid as long as three hours, but with a widely open pylorus. However, he maintains his weight and feels well except for regurgitation of gastric contents when he lies flat. Even though his ulcer is controlled, he is classified as a failure.

In evaluating these patients, the 7 points noted in Table 5 were carefully assessed. Each patient had a complete physical examination. Specific questions were asked on each point but the final decision of success or failure was the patient's satisfaction with the procedure, and these people appeared to be quite satisfied. Whether they would have given less congenial answers to an investigator other than the surgeon is unknown, but they are all working and most state they feel better than they can remember.

TABLE 5
LONG-TERM RESULTS
(Greater than one year)

Based on:
1. Dumping
2. Anemia
3. Ability to eat all foods
4. Diarrhea
5. Absence of pain, bleeding, or indigestion
6. Maintaining preoperative weight
7. Patient satisfaction

| | |
|---|---|
| Good results | 34 |
| Failures | 3 |

Fourteen patients who were doing well clinically were subjected to follow-up roentgenogram examination. The most interesting feature of this group was the wide variation in the appearance of the stomach and duodenum. Severe deformities simulating ulcer were seen in many patients who had an excellent clinical result. It was apparent that it would be extremely difficult to evaluate for recurrent ulcer on the basis of the roentgenographic appearance. Large pseudotumor filling defects in the duodenum were seen in several patients. We feel the marked postoperative deformity is related directly to the degree of scarring and inflammatory reaction present preoperatively (Figs. 4, 5, 6, and 7). Patients receiving pyloroplasty for hiatus hernia do not

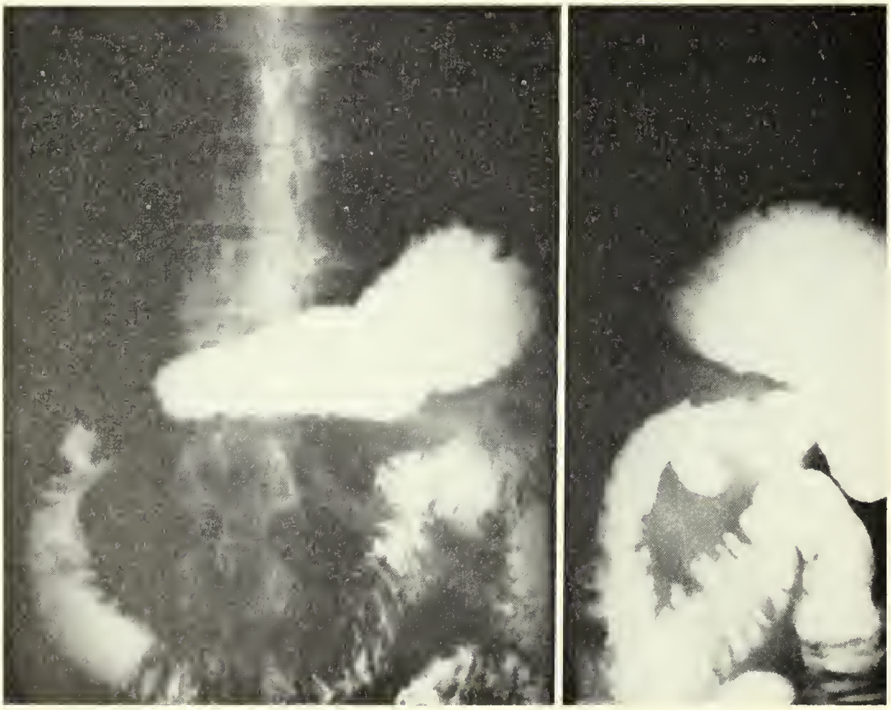

Fig. 4. On the left, the preoperative film shows a very definite postbulbar ulcer in the descending duodenum. The postoperative film on the right shows the ulcer healed and some residual pyloric deformity.

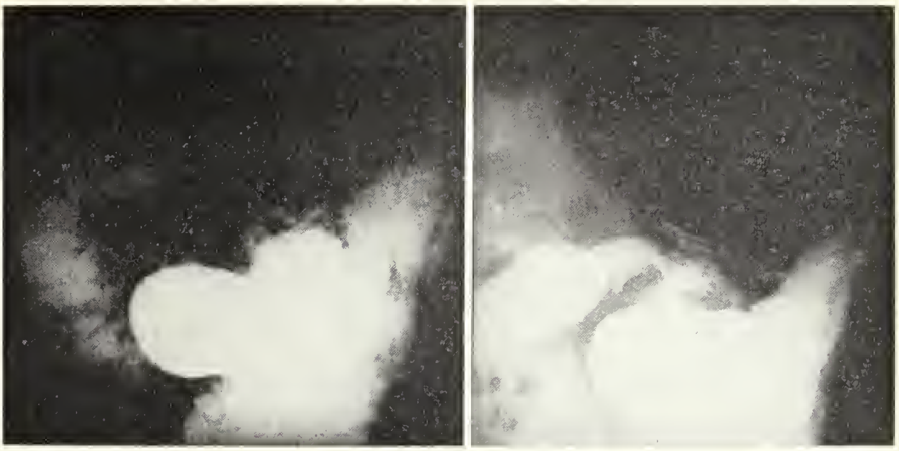

Fig. 5. Case 2. These films are shown to demonstrate the marked similarity in the pre- and postoperative appearance of the duodenum.

show these striking deformities at the operative site (Fig. 8).

The two other failures are quite informative and a detailed description of each case is given.

### CASE REPORTS

*Case 1.* L. M., a tense, thin man in an executive position in a local firm, was 58 years old at the time of surgery. He had an anterior duodenal perforation two hours prior to being seen and asked that definitive surgery be carried out if possible. He had had ulcer symptoms for twenty-five years but had not bled nor perforated previously. He had gastric freezing about six months prior to surgery. At surgery a two-inch pyloric opening was made through dense scar and edema and closed transversely. The lumen was not large but it was felt that it would open when the edema subsided. Eleven days later nothing was entering the bowel and he was taken back to surgery where a posterior gastroenterostomy was done in a dependent portion of the stomach. For reasons unknown this also failed to open (Fig. 9) and finally, at his request, he was transferred to the University of Minnesota Hospitals where he had a two-thirds gastric resection. He has subsequently felt quite weak and becomes dizzy if he eats rapidly. His best weight since surgery is 134 lb. compared to a preoperative weight of 140 lb. He finds from 1 to 2 plus urine sugar

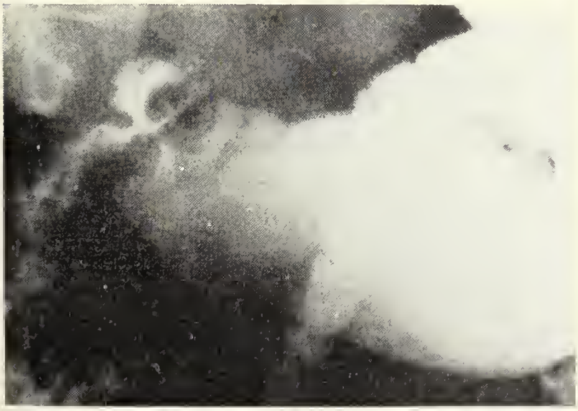

Fig. 6. A postoperative film showing the striking deformity and appearance simulating ulcer. Patient is clinically well.

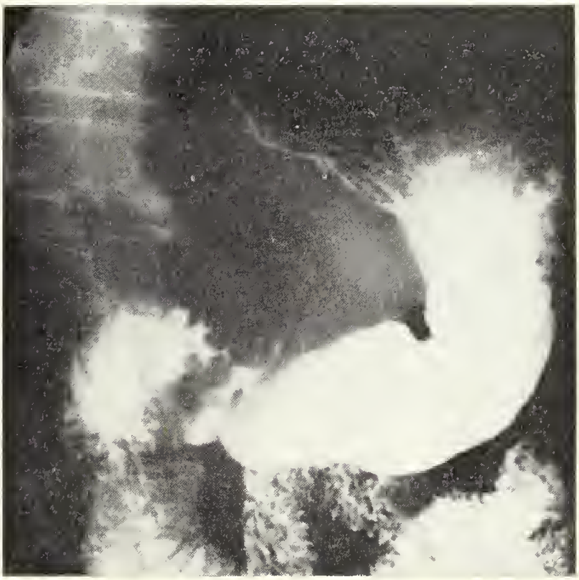

Fig. 7. A postoperative film showing the marked deformity and ulcer-type appearance. Patient clinically well.

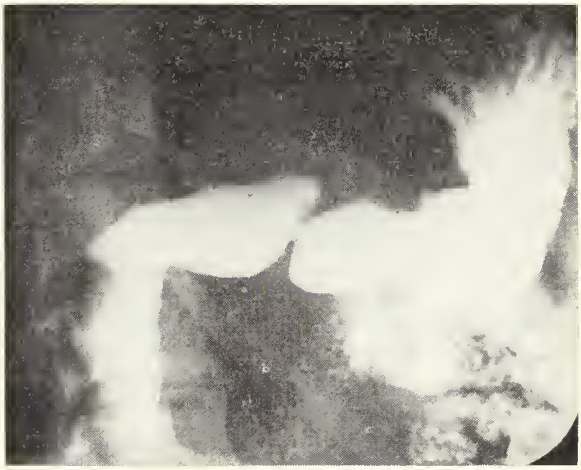

Fig. 8. A film after pyloroplasty done in connection with hiatus hernia repair. Note the normal appearing pyloric area.

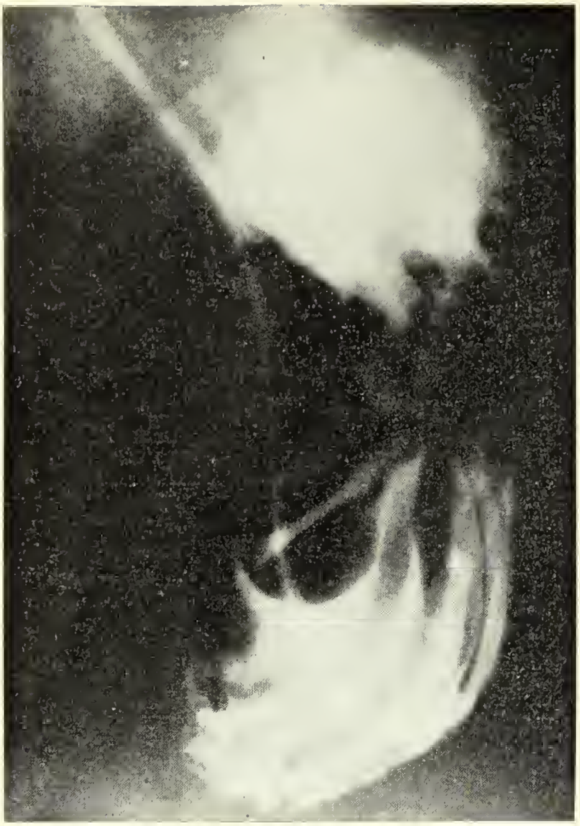

Fig. 9. Case 1. Complete obstruction of flow at pylorus and gastrojejunostomy

reaction shortly after eating sweets but not other foods and takes one-half tablet of tolbutamide (Orinase®) daily to help control symptoms. More than this results in hypoglycemia. He takes iron to control a persistent anemia.

*Case* 2. G. V. had been asthmatic since childhood and had developed increasing emphysema. For three years prior to his surgery, at age 57, he had noted epigastric pain in the spring and fall and one year before surgery bled down to a hemoglobin of 4 gm., requiring transfusions. He bled again one week before surgery but it stopped spontaneously. Overnight gastric sample contained a total of 248 mEq. free acid on one occasion and 259 on another. Serum calcium and phosphorus values were in the normal range as was his skull X-ray. At surgery an edematous pylorus with an active posterior ulcer was found. The left adrenal gland was enlarged to about twice the size of the right. This was removed and showed a cortical adenoma of the zona glomerulosa cells. Vagotomy and pyloroplasty were done.

He did well for a month and was readmitted with pneumonia. Overnight free gastric acid at this time was 16 mEq. Six months later he bled massively from the gastrointestinal tract, requiring 6 units of blood. When this stopped, his overnight acid had dropped to 3 mEq. Following this he did well for three years, when he was readmitted for treatment of his emphysema. Free gastric acid at this time was 22 mEq. His condition deteriorated and he died in respiratory failure. Permission for autopsy was refused.

## DISCUSSION

The first of the last 2 cases emphasizes the importance of making a large opening at the pylorus. In case of intense scarring a Finney pyloroplasty[5] serves very well since it essentially places the opening in the antrum, but a generous longitudinal incision, taking care not to invert the tissue, will also result in an adequate opening.

It is tempting to speculate that the hyperchlorhydria found preoperatively in the second case was a result of the adrenal adenoma but there is only indirect evidence for this. The hyperchlorhydria receded to low levels and remained there and it has been quite emphatically shown that nothing short of total gastrectomy will cure a patient if an ulcerogenic pancreatic adenoma is left in situ.[3,4] The patient had only 1 further episode of gastrointestinal bleeding and then a three-year period without ulcer symptoms. This hardly seems possible if an ulcerogenic adenoma had been overlooked. However, only 2 other cases are reported of severe ulcer diathesis associated with adenoma or hyperplasia of the adrenals.[6] Unfortunately, the adrenal gland from our patient was put immediately in formalin and the opportunity to assay its gastric secretory activity was lost. The effect of his emphysema on the ulcer is currently moot.[7]

Temporary tube gastrostomy is a highly debatable maneuver. Some feel no gastric decompression is necessary, others that the gastrostomy tube is more dangerous than the Levin tube it replaces.[8] If gastrostomy is done, the stomach must be secured to the anterior abdominal wall. In doing this we have encountered no leakage nor tendency to bowel incarceration. The patients are far more comfortable, able to withstand long periods of gastric decompression, and protected against gastric atony which may follow vagotomy.[9]

The symptoms shown by Case 1 following the ingestion of sweets are characteristic of the secondary hyperglycemia and hypoglycemia known to occur after gastric resection.[10] This appears to be a physiologic response to too rapid transit of sugar to the bowel and secondarily to the blood stream with secondary overproduction of insulin. An oral hypoglycemic agent apparently smoothes out these responses and lessens the symptoms.

In view of these results we are tending to offer surgery earlier in the course of ulcer disease and especially when the patient is bleeding actively. If 3 or 4 pints of blood do not suffice to bring the hemoglobin values toward normal, surgery is done. Even those patients who are not bleeding are no longer allowed twenty years to prove they cannot handle their disease. When one has the opportunity to observe the ulcer patient before surgery with his timid, frightened, querulous, or even aggressive temperament and then see him later with most of these traits absent, one gains a distinct respect for ulcer pain. If this procedure proves itself over long-time periods it will indeed be a boon to the ulcer victim, and numerous reports are now appearing which indicate this may be so.[11,12]

## SUMMARY

Thirty-eight patients have been operated for complications of duodenal ulcer; 1 has died, 34 have good results, and 3 are failures. The indications for surgery in this group are the same as reported by others. In evaluating their surgical results, care must be taken in the interpretation of postoperative X-rays as the duodenum remains very distorted from scarring and surgery and is indistinguishable from a duodenum afflicted with active ulcer.

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*Series on* DISEASES OF THE SKIN

# Pityriasis Rosea

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PITYRIASIS ROSEA is an acute dermatosis characterized by a symmetrical eruption of pink or salmon-colored, round, oval, superficial scaly patches with yellowish, crinkly centers.

The disorder usually begins with the appearance of a single oval element, the mother plaque, which appears in approximately two-thirds of the cases. The initial lesion is flat, pink, and slightly scaly and bears a resemblance to tinea glabrosa. After an interval of seven to ten or more days other lesions appear on the trunk and proximal portions of the extremities which resemble the initial one except for size. The disease is uncommon on the face and scalp, although in severe cases these areas may be affected. Plaques are rarely seen below the elbows and knees, and occasionally the eruption may be limited to the axillas or groins. The long axes of the lesions are parallel to the lines of cleavage, which is a diagnostic aid. At the margins there is a collarette of scale which is adherent and dry. Papular and vesicular varieties of the disorder are unusual.

Pruritus, though absent in mild cases, may be severe in others. Hot bathing and exercise which produces sweating provoke itching.

The cause of the disease is unknown, although fungi and viruses have been considered.

The disorder persists for three to eight weeks or occasionally longer if it is untreated. Relapses are rare since one attack usually confers permanent immunity. The disease is self-limited, although appropriate therapy (ultraviolet radiation, soothing topical applications, and the avoidance of hot baths) hastens the involution of the lesions.

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# Portal Vein Thrombosis

## An Uncommon Sequela of Exchange Transfusion

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SINCE ALLEN AND DIAMOND[1] popularized the use of exchange transfusions in the treatment of hyperbilirubinemia of the newborn, cannulization of the umbilical vein has become a common procedure during the neonatal period. The use of an indwelling umbilical catheter has also become a standard procedure in prematures suffering from respiratory distress syndrome.

The purpose of this paper is to report a case of extrahepatic portal vein thrombosis following the prolonged use of an umbilical vein catheter.

### CASE REPORT

G.H., a 2½-year-old male child, was admitted to St. Paul Children's Hospital in September 1965 with a diagnosis of splenomegaly of unknown etiology. He was the product of an uneventful pregnancy terminated by cesarean section because of incompatibility. Birth weight was 5 lb. 6 oz. During the neonatal period he had 4 uncomplicated exchange transfusions. An umbilical catheter remained in place between transfusions for a period of three days. Because of a persistent umbilical drainage and questionable right lower lobe pneumonitis following the exchange, the patient was treated with chloromycin (50 mg. per kilogram) and penicillin (50,000 units per kilogram) for two weeks. A culture of the drainage grew out a paracolon organism. Since that time the patient did well. Growth and development was normal and there was no evidence of chronic illness, bleeding dyscrasias, or anemia.

In September 1965 the patient had a yearly physical examination and was noted to have an enlarged spleen. He was subsequently hospitalized for evaluation.

On admission he appeared as a well-developed and well-nourished child within the normal growth parameters for age. The physical examination except for the abdomen was unremarkable. The abdomen was protuberant but without evidence of ascites or dilated superficial vessels. The liver was palpable 1 cm. below the right costal margin; its edge was sharp and nontender. The spleen was enlarged 6 cm. below the left costal margin, was nontender and firm, and had a normal sharpened margin. Bowel sounds were normal.

The laboratory work-up was as follows: A complete blood count showed a hemoglobin of 12.7 gm. percent and white blood count of 4.750 per cubic millimeter with 44% neutrophils, 51% lymphocytes, 7% monocytes, and 3% eosinophils. Urinalysis was normal. A platelet count was 95,000. Bleeding and clotting times were normal. A bone marrow aspiration showed increased numbers of megakaryocytes and a normal myeloid: erythroid ratio. A RBC fragility test was normal. Liver function tests including a thymol turbidity, SGOT, SGPT, and cephalin-cholesterol flocculation tests were negative. A bromsulphthalein test was normal. An initial prothrombin time was seventeen seconds (control, 12.5 seconds) but on repeat examination was normal. A sedimentation rate and protein electrophoretic pattern were both within normal limits. X-ray examination included a normal barium swallow and upper gastrointestinal series. An X-ray of the abdomen confirmed the presence of splenomegaly. Using a percutaneous splenoportogram technique, portal vein thrombosis was demonstrated with concomitant collateral circulation. There was no evidence of cavernous recannulization of the thrombus (see figure). The patient has remained asymptomatic. A primary bypass procedure is planned at a later date.

### DISCUSSION

In 1927, Smith and Howard[2] reported on five cases of gastric hemorrhage in children with splenomegaly. They reviewed the available world literature and thus established this condition as a definite clinical syndrome. They postulated that an acquired obstruction of the extrahepatic portal system caused an increased portal pressure and the development of collateral circulation resulting in varices and subsequent hemorrhage. Numerous case reports have supported this hypothesis and added to understanding the natural history and management of the condition.[3–5]

This syndrome presents in a variety of ways.

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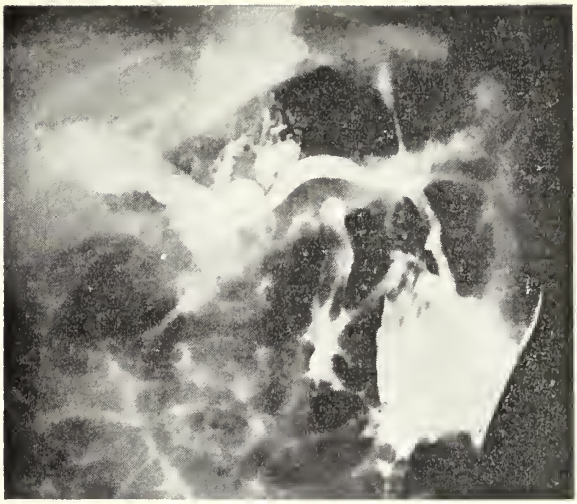
Either the infant becomes symptomatic with marked ascites and splenomegaly or the asymptomatic toddler is fortuitously noted to have an enlarged spleen on routine physical examination. Occasionally a child presents with the sudden onset of severe gastrointestinal bleeding. Interestingly enough, manifestations of hypersplenism rarely become a significant problem during the course of the disease. In addition, liver function is never altered. This is in contrast to intrahepatic portal vein thrombosis secondary to destructive liver disease. Once the condition becomes overt, it frequently progresses until bleeding episodes either require a primary surgical correction or a temporary palliative measure.

Clatworthy and Boler[4] emphasize the role of the splenoportogram in this condition. A variety of clinical conditions involving the spleen may simulate extrahepatic portal obstruction but without the definitive X-ray study the diagnosis cannot be made. Foster and co-workers[5] use this technique to plan the surgical approach for primary repair as well as a means of follow-up.

A variety of circumstances may cause this syndrome. Thompson and Sherlock[6] estimate that 10% of cases are associated with neonatal omphalitis and retrograde thrombophlebitis. Other factors which are implicated include generalized sepsis with dehydration (5% of cases),[7] primary peritonitis (5%),[6] and alterations in the umbilical vessels secondary to catheterization for exchange transfusions or for treatment of respiratory distress syndrome.[8] Scott[9] demonstrated the iatrogenic lesions which can occur in the umbilical vessels of babies dying of respiratory distress syndrome without overt evidence of omphalitis. Although in the majority of cases the etiology remains undetermined, manipulation of umbilical vessels undoubtedly plays a significant role.

The surgical management of this condition remains a controversial issue. What constitutes the optimal time for a primary bypass procedure is particularly variable. Shaldon and Sherlock[3] state that 8 years of age is the earliest time for shunting vessels whereas Foster and associates[5] use a 1-cm. portal vein diameter measured on an X-ray study as the criterion for operation. Clatworthy and Boler[4] have been successful with 4-year-old children by modifying conventional techniques. Most surgeons agree that splenectomy alone is contraindicated unless the splenic vein is the only vessel involved. This palliative procedure is short lived and eliminates a site for future shunting. The use of a portacaval bypass procedure popular in intrahepatic blockage is not feasible in extrahepatic obstruction. Although other shunting combinations have been tried, splenorenal shunt remains the most successful.



This is a percutaneous splenoportogram of the patient showing an occlusion of the extrahepatic portal vein and collateral circulation. Recannulization of the vessel is not apparent.

Prognosis in this condition is quite good. Without the stigmata of added liver involvement, signs of chronic illness are absent. Except for bleeding potential, patients are free from life-threatening complications. Palliative surgery is helpful if bleeding persists. Curative rate with surgery is at worst 50%[5] and doubtless will improve.

## SUMMARY

Extrahepatic portal vein thrombosis is an unusual complication of umbilical vein cannulization in infancy, with good prognosis amenable to surgical cure. The increased use of umbilical catheters may change incidence from a relative rarity to one of greater prevalence.

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# Transactions of the North Dakota State Medical Association

## EIGHTY-FIRST ANNUAL MEETING

**Minot, North Dakota, May 3, 4 and 5, 1968**

*(Continued from the August 1968 issue)*

### COMMMITTEE ON CARDIOVASCULAR DISEASES

The Committee on Cardiovascular Diseases has held no meetings.

I think that meetings will be forthcoming, however, as the Regional Medical Program develops. So far no definite plans have developed from that program, but it is expected that during the next year developments will occur. Inasmuch as the State Medical Association has shown an interest in the Regional Medical Program from its beginning, it would seem that the House of Delegates should discuss some of the ramifications of this program at that meeting.

Respectfully submitted,
(Signed) Robert D. Story, M.D., *Chairman*,
Committee on Cardiovascular Diseases

### COMMITTEE ON CONSTITUTION AND BY-LAWS

On behalf of my Committee I would first like to extend thanks and appreciation to Mr. Lyle Limond and Mr. Vern Wagner and their office staff for many hours of helpful assistance and guidance. I would like to thank Dr. Phillip Dahl, Dr. William Buckingham and Dr. James Moses for their 100% attendance at all meetings and for their efforts of study and assistance. A review of all minutes of the Association from 1957 to 1967 were scrutinized and the recommended changes were incorporated.

We held 5 meetings, September 27, 1967, January 23, January 30, February 20, and March 18, 1968. Minutes of these meetings were kept and a copy of these minutes will be on file at the Executive Secretary's office.

At first glance one might think that much material has been deleted from the previous Constitution. We utilized the Constitution and By-Laws of the AMA and of the South Dakota Medical Association in revising this document. It was the general feeling of the Committee that the Constitution should be the basic structure or skeleton of the Association and that the By-Laws should be the descriptive portion of the entire document. The greatest change which will be readily apparent to all is the recommended change from a Committee to a Commission form of government.

The proposed amendments to Chapter XIII of the present By-Laws, regarding the procedure of mediation, was considered in detail. It was the decision of the Committee to have a separate document entitled "Rules and Procedure for Mediation", which will be on file at the office of the Executive Secretary and may well be supplied to all present and incoming members of the Association.

The following pages contain the proposed documents; the Constitution, the By-Laws and the Rules and Procedure for Mediation.

Respectfully submitted,
(Signed) Ralph J. Dunnigan, M.D., *Chairman*,
Committee on Constitution and By-Laws

### CONSTITUTION

#### Article I—TITLE AND DEFINITION

The name of this organization shall be the North Dakota Medical Association. It is a federacy of its district societies.

#### Article II—OBJECTS

The objects of the Association are to promote the science and art of medicine and the betterment of public health.

#### Article III—COMPONENT SOCIETIES

Component societies shall consist of those district medical societies which hold charters from this Association.

#### Article IV—MEMBERS

The North Dakota Medical Association is composed of individual members of district medical societies and others as shall be provided in the By-Laws.

#### Article V—HOUSE OF DELEGATES

The legislative and policy-making body of the Association is the House of Delegates composed of elected representatives and others as provided in the By-Laws. The House of Delegates shall transact all business of the Association not otherwise specifically provided for in this Constitution and By-Laws and shall elect the general officers except as otherwise provided in the By-Laws.

#### Article VI—COUNCIL

The Council shall be the executive body of the Association and shall consist of one Councillor from each district society and the immediate Past President of the Association as Councillor at Large. It shall have charge of the property and financial affairs of the Association and shall perform such duties as are prescribed in the By-Laws.

#### Article VII—GENERAL OFFICERS

The general officers of the Association shall be a President, President-Elect, First Vice-President, Second Vice-President, Immediate Past-President, Secretary, Treasurer, Speaker of the House of Delegates, Vice Speaker of the House of Delegates and a Councillor from each District Medical Society. Their qualifications and term of office shall be provided in the By-Laws.

### Article VIII—SCIENTIFIC ASSEMBLY

The Scientific Assembly of the North Dakota Medical Association is the convocation of its members for the presentation and discussion of subjects pertaining to the science and art of medicine.

### Article IX—CONVENTIONS

The House of Delegates and the Scientific Assembly shall meet annually and at such other times as is deemed necessary or as provided in the By-Laws, in cities recommended by the Council and approved by the House of Delegates.

### Article X—FUNDS, DUES AND ASSESSMENTS

Funds shall be raised by an equal per capita assessment on each member of each component society. The amount of the assessment shall be fixed by the House of Delegates.

### Article XI—AMENDMENTS

The House of Delegates may amend any article of this Constitution by:

1) An affirmative vote of two-thirds of the delegates seated at the annual session, provided that such amendment shall have been presented at a regularly scheduled meeting of the House of Delegates at the previous annual session; or

2) By an affirmative vote of two-thirds of the delegates seated at the annual session, provided that such amendment shall have first been approved by the Council, and submitted by the Chairman of the Council to the House of Delegates; and provided that the Chairman of the Council shall have caused to be furnished a copy of the amendment to each member of the Association, at least ninety days prior to the beginning of the annual session.

### Article XII—SEAL

The Association shall have a common seal. The House of Delegates by a two-thirds vote of the delegates seated at the annual convention shall have the power to break, change or renew the seal.

## BY-LAWS CHAPTER I

### Membership (Qualifications, Election and Rights)

SECTION 1. This Association shall consist of Regular Members, Honorary Members, Associate Members, Service Members and Affiliate Members.

SECTION 2. Regular Members shall be the members in good standing of the component societies, who have paid their full per capita dues, thereby earning all the rights of membership including the right to vote and hold office.

SECTION 3. Honorary Members. Any reputable physician who has been practicing medicine for a period of forty years after graduation from medical school shall be eligible to honorary membership without payment of dues upon election to honorary membership by his local society and approval by the Association through its House of Delegates.

SECTION 4. Associate Members. Physicians teaching in any regular medical school, hospital residents and interns in an approved North Dakota hospital and those physicians under voluntary retirement who are not eligible for honorary membership, and not otherwise eligible to regular membership may become Associate Members of this Association, when elected Associate Members of the component society of the district in which said individuals reside. Such members shall enjoy the same privileges as Regular Members, except the right to vote or be elected to office.

SECTION 5. Service Members. Regular commissioned medical officers of the armed services, Veterans Administration physicians and United States Public Health Service physicians may become Service Members of this Association when elected Service Members of the component society of the district in which they reside. Such members shall enjoy the same privileges as Associate Members as provided in Section 4.

SECTION 6. Persons who belong to one of the following classes may become Affiliate Members:

1. Dentists who hold the degree of D.D.S. or D.M.D., who are members of the American Dental Association and their state and local dental societies, to be approved and nominated by the Council;

2. Pharmacists who are active members of the American Pharmaceutical Association and their state and local associations, to be approved and nominated by the Council; and

3. Teachers of medicine or of the sciences allied to medicine who are citizens of the United States and are not eligible to membership, to be approved and nominated by the Council.

A majority vote of the House of Delegates shall elect nominees to Affiliate Membership.

SECTION 7. No person who is under sentence of suspension or expulsion from any component society of this Association, or whose name has been dropped from its roll of members shall be entitled to any of the rights or benefits of this Association, nor shall he be permitted to take part in any of its proceedings until such time as he has been relieved of such disability.

SECTION 8. Each member in attendance at the annual session shall enter his name and address and the component society of which he is a member in the registration book. No member or delegate shall take part in any proceedings of an annual session until he has complied with the provisions of this section.

SECTION 9. If the annual report and dues of a component society are not received by the Secretary of the Association for two consecutive years, then the charter of that society shall be automatically revoked and the Secretary of the Association shall notify the Secretary of that component society to that effect.

## CHAPTER II

### Annual and Special Sessions of the Association

SECTION 1. The annual session of the Association shall be held for four consecutive days which period of time will include the first Sunday in May.

SECTION 2. Special sessions of either the Association or the House of Delegates may be called by the President or the Executive Committee of the Council, if all members of that Executive Committee vote in the affirmative, or on petition of two-thirds of the total number of delegates in the Association.

Notices of such special sessions shall be mailed to all officers of the Association and to the President and Secretary of each component society at least thirty days before the date of the special session. The Secretary of each component society shall notify the delegates of that society immediately of the special session. All notices shall include information as to the purpose or purposes of the special session, time, date, and location.

SECTION 3. The fiscal year of this Association shall be the calendar year, that is January 1 through December 31 of each year.

SECTION 4. The House of Delegates and the Council shall meet annually at the time and place of the annual session of the Association.

## CHAPTER III

### General Meetings

SECTION 1. The general meetings shall be held on at least two days of the annual session. All registered members and guests shall be invited to these meetings. Each general meeting shall be presided over by the President, or in his absence or disability, by the President-Elect or one of the Vice-Presidents.

At the general meetings, the scientific sessions and presentations shall be delivered. No business of the Association shall be transacted at a general meeting.

## CHAPTER IV

### House of Delegates

SECTION 1. The House of Delegates shall meet annually at the time and place of the annual session of the Association, and shall so fix its hours of meeting as not to conflict with the first General Meeting of the Association, so as to give Delegates an opportunity to attend the scientific proceedings and discussions so far as is consistent with their duties. But if the business interest of the Association and profession requires, the House of Delegates may meet in advance or remain in session after the final adjournment of the General Meeting.

SECTION 2. Each component society shall be entitled to send to the House of Delegates each year, one delegate for each fifteen members and one for each major fraction thereof, but each district society holding a charter from this Association, which has made its annual report and paid its assessments as provided in this Constitution and By-Laws, shall be entitled to one delegate. In case a regularly elected delegate or alternate is unable to attend the annual meeting of the Association, the Speaker of the House of Delegates may appoint a substitute from the local society who shall have the rights and privileges of the regular delegates. Alternates may be seated in the House of Delegates but shall not be entitled to vote if the delegate for whom they are an alternate is present.

The following shall have the privileges of the floor but without the right to vote: The President of the Association, the President-Elect, the Councillors, the Secretary, the Treasurer, the Past Presidents, and the delegates and alternate delegates to the American Medical Association.

SECTION 3. A majority of the elected delegates or designated alternates shall constitute a quorum for the transaction of business. All meetings of the House of Delegates shall be open to the members of the Association.

SECTION 4. It shall give diligent attention to and foster the scientific work and spirit of the Association, and shall constantly study and strive to make each annual session a stepping stone to further ones of higher interest.

SECTION 5. It shall consider and advise as to the material interest of the profession, and of the public in those important matters wherein the public is dependent upon the profession, and shall use its influence to secure and enforce all proper medical and public health legislation, and to diffuse popular information in relation thereto.

SECTION 6. It shall make careful inquiry into the condition of the profession in the state, and shall have authority to adopt such methods as may be deemed most efficient for building up and increasing the interest in such local societies as already exist and for organizing the profession in counties where societies do not exist. It shall especially endeavor to promote friendly intercourse between physicians of the same locality, and shall continue these efforts until every reputable physician in every county of the state has been brought under the medical society influence.

SECTION 7. It shall elect representatives to the House of Delegates of the American Medical Association in accordance with the Constitution and By-Laws of that body.

SECTION 8. It shall, upon application, provide and issue charters to district societies organized to conform to the spirit of this Constitution and By-Laws.

SECTION 9. In sparsely settled sections it shall have authority to organize the physicians of two or more counties, and such societies, when organized and chartered, shall be entitled to all the privileges and representation provided herein for district societies.

## CHAPTER V

### Election of Officers

SECTION 1. All elections shall be by ballot and a majority of the votes cast shall be necessary for election. However, if there is only one nomination for an office, the election may be made by acclamation upon unanimous consent of the members of the House of Delegates present and voting without ballot.

SECTION 2. At the first meeting of the House of Delegates at the annual session, the President of the Association shall announce the names of the members of a nominating committee of three which shall submit its report to the House of Delegates at the second meeting of the annual session.

SECTION 3. Nothing in this chapter shall be construed to prevent additional nominations by members of the House of Delegates for officers in the Association; the Speaker or the Vice-Speaker, whichever is present, shall call for such nominations after the report of the Nominating Committee has been received and before an officer has been elected.

SECTION 4. The President, President-Elect, Vice-Presidents, Secretary, and Treasurer shall be elected annually by the House of Delegates to serve for a term of one year.

SECTION 5. The Councillors shall be elected annually by the House of Delegates, from a list submitted by the District Society, to serve for a term of three years. A councillor shall not serve more than two consecutive terms. When a Councillor is elected to fill the unexpired term of a previous Councillor, the portion of the unexpired term shall not be included in the limit of two consecutive terms.

SECTION 6. The Speaker and Vice-Speaker of the House of Delegates shall be elected for a one year term by the House of Delegates at its second meeting of each annual session. The Speaker and Vice-Speaker may, but need not be, members of the House of Delegates.

## CHAPTER VI

### Duties of Officers

SECTION 1. The President shall preside at all general meetings of the Association; appoint all committees not otherwise provided for; deliver an annual address at such time as may be arranged; and perform such other duties as custom and parliamentary usage may require. He shall be the real head of the profession of the state during his term of office and, as far as practicable, visit and attend meetings of the component medical societies. On such occasions, he shall also visit the appropriate Councillors in an endeavor to become familiar with medical conditions and to assist in any problems they may have. He shall be ex-officio a member of the Council and of all committees. He shall designate the areas of responsibility for the President-Elect, the First Vice-President and the Second Vice-President.

SECTION 2. The President-Elect or one of the Vice-Presidents, when called upon, shall assist the President in the performance of his duties, and during his absence, or at the request of the President, one of them shall officiate in his place. In case of death, resignation or removal of the President, the vacancy shall be filled by the President-Elect, and in case of his death, resignation or removal, by the First Vice-President, and in case of his death, resignation or removal, by the Second Vice-President.

SECTION 3. The Treasurer shall give bond in such sum as the Council shall demand, the cost of the same being paid by the Association. He shall demand and receive from the Secretary all funds collected by him. He shall make a financial report at each meeting of the Council. He shall make an annual report upon the completion of the audit. He shall submit his accounts to such examination as the Council may order. He shall pay out money from the Treasury only upon properly executed vouchers.

SECTION 4. The Secretary shall attend the general meetings of the Association and the House of Delegates and keep minutes of their respective proceedings in separate record books. He shall also attend all meetings of the Council. He shall be custodian of all record books and papers belonging to the Association, except such as properly belong to the Treasurer, and shall keep account of and turn over monthly to the Treasurer all funds of the Association which he receives. He shall provide for the registration of the members and delegates at the annual sessions. He shall, with the cooperation of the secretaries of the component societies, keep a card-index register of all the legal practitioners of the state by counties, noting on each his status in relation to his local society and, on request, shall transmit a copy of this list to the American Medical Association. He shall aid the Councillors in the organization and improvement of the local societies and in the extension of the power and usefulness of this Association. He shall conduct the official correspondence, notifying members of meetings, officers of their selection, and committees of their appointment and duties. He shall utilize such assistants as may be ordered by the Council including a part or full-time executive secretary. The Secretary's report shall cover the fiscal year. He shall supply each component society with the necessary blanks for making their annual report; keep an account with the component societies, charging against each society its assessment, collect the same, and at once turn it over to the Treasurer. Acting with the Committee on Scientific Work, he shall prepare and issue all programs. The amount of his salary shall be fixed by the Council. He shall give bond in such sum as the Council may demand. The expense of such bond shall be paid by the Association.

SECTION 5. The Speaker, and in his absence, the Vice-Speaker, of the House of Delegates shall preside at the meetings of the House of Delegates and shall perform such duties as custom and parliamentary usage require of a Presiding Officer. He shall have the right to vote only when his vote is necessary to break a tie.

SECTION 6. Executive Secretary. An Executive Secretary, full or part-time, may be employed as ordered by the Council. The salary of the Executive Secretary and office assistants of the Executive Secretary shall be fixed by the Council. The Executive Secretary shall give bond in such amount as the Council directs. The expense of such bond shall be paid by the Association. Office space shall be ordered by the Council for the Executive Secretary and such assistants as are necessary.

The duties of the Executive Secretary shall be those as ordered and delegated to him by the President of the Association, the chairman of the Council, the Secretary of the Association, other officers of the Association, and chairmen of various committees, both standing and special. The Executive Secretary shall have the authority to act as representative of the Association when so directed by the President. The Executive Secretary shall be of particular assistance for arrangements for the annual session or for special sessions of the Association, the Council, or the House of Delegates.

The Executive Secretary shall give a report of his official activities and those of his office at the annual session of the Association, or as requested by the President or the Secretary of the Association or the chairman of the Council. This report shall include a financial report which shall be subject to audit upon order of the Council. He shall submit his accounts to such examination as the Council may order.

## CHAPTER VII

## The Council

SECTION 1. The Council shall be the executive body of the Association and shall consist of one Councillor from each councillor district, and the immediate Past President of the Association as Councillor at Large. The term of office of the Councillor at Large shall be until the President currently in office becomes a retiring President. The Secretary and the President of the Association shall be ex-officio members of the Council. The Council shall have full authority and power of the House of Delegates between the annual sessions unless the House of Delegates shall be called into a special session as provided for in the By-Laws.

SECTION 2. No person shall expend or use, for any purpose, money belonging to the Association without the approval of the Council.

SECTION 3. All acts of the House of Delegates involving the expenditure, appropriation, or use in any manner of money or the acquisition or disposal in any manner of property of any kind belonging to the Association, must be approved by the Council before the same shall become effective.

SECTION 4. The Council shall formulate rules governing the expenditure of money to meet the necessary running expenses and fixed charges of the Association as well as such other rules governing its actions as it may deem necessary or desirable. A majority of Council members shall constitute a quorum for the transaction of business. The Council shall recommend to the House of Delegates at the second meeting of the annual session the amount of per capita dues required by the budget established by the Council for the ensuing year.

SECTION 5. The Council shall hold meetings during the annual session of the Association and at such times as necessity may require, subject to the call of the President of the Association or the Chairman of the Council, or on petition of three Councillors. It shall keep a permanent record of its proceedings at all meetings. It shall, during the meeting at the annual session elect a Chairman, Vice-Chairman, and Secretary. The Chairman of the Council shall appoint an Executive Committee to function during the enusing year. It shall, through its Chairman, make an annual report to the House of Delegates at the first meeting of the House of Delegates at the annual session. This report shall include an audit of the accounts of the Secretary and Treasurer and other agents of this Association and shall also specify the character and cost of all the publications of the Association during the year, the amount of all other property belonging to the Association or under its control, with such suggestions as it may deem necessary. A Councillor who fails to attend meetings of the Council and whose absence in the opinion of the Council is without good cause, shall be replaced. In the event of a vacancy in any elective office, the Council may fill the same until the next annual election.

SECTION 6. Each Councillor shall attend, so far as is possible, all meetings of his district society, keep advised of the general conditions of his district society and attempt to improve the zeal of the society. He shall make an annual report of his activities and of the condition of the profession of his district society to each annual session of the House of Delegates.

SECTION 7. Collectively the Council shall be the board of censors of the Association and shall also act as a mediation committee. It shall consider questions referred to it by the board of censors of a component medical society; it shall accept for consideration an appeal by a physician member of a component medical society who disagrees with the decision of the component society involved; it shall likewise accept for consideration an appeal by one of the lay public who has placed a matter of concern to the component medical society and is dissatisfied with the action and decision of the component medical society. In addition, the Council shall consider matters of concern which may be considered intercomponent society matters or problems which affect hospitals or hospital personnel affecting intercomponent societies. The decision of the Council in all cases shall be final. When the Council is acting as the mediation committee it shall be guided by the rules of procedure prescribed by the House of Delegates.

SECTION 8. The Council shall provide for and superintend the publication and distribution of all proceedings, transactions, and memoirs of the Association, and shall have authority to appoint such assistants as it deems necessary.

SECTION 9. All matters concerning the Annual Session except the composition of the Scientific Program and arrangements on entertainment shall be managed by the Council with the cooperation of the District Society Committees. All commercial exhibits shall be paid into the Association and disbursed by the Council. All matters involving the expenditure of monies must be first approved by the Council and it shall pay all the expenses of the Annual Session except the cost of entertainment.

## CHAPTER VIII
## COMMISSIONS

SECTION 1. The standing commissions of the North Dakota Medical Association shall be:

A. Commission on Medical Services
B. Commission on Scientific Medicine
C. Commission on Communications
D. Commission on Allied Organizations
E. Commission on Legislation and Governmental Relations
F. Commission on Socio-Economic Affairs

SECTION 2. Each Commission shall consist of the chairman, plus at least 12 additional members, all to be appointed by the President. The President shall assign one or more Councillors to each commission to be ex-officio members, without a vote.

SECTION 3. Each Commission shall meet at least twice each year. The date for the first meeting shall be set by the President, as soon as practical after the annual session. The second meeting shall be scheduled by the members of the Commission. Special meetings of the Commission may be called by the chairman.

SECTION 4. General procedures of operation of the Commission shall be set forth by the Commission and approved by the Council.

SECTION 5. No expense shall be incurred by any Commission or Commissioner or by the Secretary or the Secretary's office without first receiving proper authority from the Council.

SECTION 6. Portfolios of the Commissions. A. The Commission on Medical Services shall concern itself in all matters pertaining to emergency medical services, crippled children, aging and rehabilitation, maternal and child welfare, mental health, public health, rural and school health.

B. The Commission on Scientific Medicine shall concern itself in all matters pertaining to the scientific program, arrangements for the annual meeting, medical education, nursing education, cancer, diabetes, cardiovascular diseases, multiple sclerosis and foreign trained physicians.

The Commission on Scientific Medicine shall name a Committee, either from among its membership or the membership of the Association, to arrange the scientific program of the annual session. The Committee shall consist of six members. The members shall serve a term of three years, and their terms shall be so arranged that two appointments shall be made each year. At least one member of the Committee shall be a resident of the city in which the next annual session will be held. The Committee shall hold its first meeting on or before the second Tuesday in December at which time it shall consider all suggested speakers for the Scientific Program, submitted by the members of this Association. The Committee shall select at least twenty-five percent of the speakers on the Scientific Program from members of the Association, if practicable, and if there are not sufficient suggested local speakers to meet this quota, the Committee shall be authorized to request presentation of such papers from individuals who are members. It shall determine the character and scope of the scientific proceedings of the Association, subject to the provisions of instructions of the House of Delegates, or of the Association, or to the provisions of the Constitution and By-Laws. Thirty days previous to each annual session it shall prepare and issue a program announcing the order in which papers, discussions and other business shall be presented, which shall be adhered to by the Association as nearly as is practicable.

Local arrangements shall be the responsibility of the Society in the territory where the annual session is to be held.

C. The Commission on Communications shall concern itself with all matters pertaining to public relations, official publication, necrology and medical history, AMA-ERF, physicians' placement service, and constitution and by-laws.

D. The Commission on Allied Organizations shall concern itself with all matters pertaining to the North

Dakota Hospital Association, North Dakota Pharmaceutical Association, State Bar Association of North Dakota, North Dakota Dental Association, Woman's Auxiliary, Medicine and Religion, and State Nurses' Association.

E. The Commission on Legislation and Governmental Affairs shall concern itself with all matters pertaining to legislation, governmental agencies, medical center advisory council, the advisory committee to the State Highway Department, Governor's Health and Planning Committee, and the State Health Council.

F. The Commission on Socio-Economic Affairs shall concern itself with all matters pertaining to medical economics, including all third party participation in the delivery or paying of medical services, and liability insurance.

SECTION 7. The President may assign various subjects to any one of the standing Commissions; or he may appoint special committees, at his discretion, as the need arises.

## CHAPTER IX

### Assessments and Expenditures

SECTION 1. The annual assessment per capita shall be fixed by the House of Delegates at each annual session of the Association. The Secretary of each component society shall forward its assessment together with its roster of all officers and members, list of delegates, and list of nonaffiliated physicians of the county or district to the Secretary of this Association not later than the first day of March in each year.

SECTION 2. Any district society which fails to pay its assessment, or make the report required, on or before the first day of April in each year, shall be held as suspended, and none of its members or delegates shall be permitted to participate in any of the business or proceedings of the Association or of the House of Delegates until such requirements have been met.

SECTION 3. All motions or resolutions appropriating money shall specify a definite amount or so much thereof as may be necessary for the purpose indicated, and must be approved by the Council.

SECTION 4. New Members. New members shall be assessed the per capita annual dues if they become members for the major portion of the Association's fiscal year, and one-half the annual dues for six months or less.

SECTION 5. Assessments for Delinquent Members. Members who have dropped from the Association for non-payment of dues, shall, upon reinstatement to good standing in the Association be assessed the total per capita dues, regardless of the date during the fiscal year of the Association in which such reinstatement becomes effective.

SECTION 6. Exceptions to the per capita annual assessment are as follows:

A. Associate and Service Members, whether residing in or outside of North Dakota, shall be assessed ten dollars.

B. Members of the Association who have left North Dakota and return to active practice in North Dakota shall be charged pro rata of the annual per capita assessment for the current year on this basis: the full assessment if they return to active practice in the first half of the current fiscal year, and one-half of the full assessment if they return to practice in the second half of the current fiscal year.

C. Members who are totally and permanently disabled for medical practice by reason of physical or mental incapacity shall be exempt from any annual assessment. Such members shall not have the right to vote or to hold office and shall not receive the official publication of the Association without charge; if they do wish the official publication, they may receive it for the charge which is made by the publishing agency to the Association.

D. Members in graduate training without restrictions to the period of time involved shall be assessed ten dollars.

## CHAPTER X

### Rules of Conduct

The principles set forth in the Principles of Ethics of the American Medical Association shall govern the conduct of members in their relation to each other and to the public.

## CHAPTER XI

### Rules of Order

The deliberations of this Association shall be governed by parliamentary usage as contained in "Robert's Rules of Order, Revised", unless otherwise determined by a vote of its respective bodies.

## CHAPTER XII

### Component Societies

(District Medical Societies—Councillor Districts)

SECTION 1. There shall be established the following numbered district medical societies:

1. To include the counties of Cass, Richland, Ransom, and the district medical society therein to be known as the First.

2. To include the counties of Rolette, Towner, Pierce, Benson, Ramsey, Eddy, Foster, the western part of Nelson, and the district medical society therein to be known as the Second.

3. To include the counties of Cavalier, Pembina, Walsh, Grand Forks, the eastern part of Nelson, and the district medical society therein to be known as the Third.

4. To include the counties of Burke, Mountrail, the northern part of McLean, Renville, Ward, Bottineau, McHenry, Wells, and the district medical society therein to be known as the Fourth.

5. To include the counties of Barnes and Griggs, and the district medical society therein to be known as the Fifth.

6. To include the counties of Mercer, Oliver, the southern part of McLean, Sheridan, Morton, Burleigh, Kidder, Grant, Sioux, Emmons, Logan, McIntosh, and the district medical society therein to be known as the Sixth.

7. To include the counties of Stutsman, LaMoure, Dickey, Sargent, and the district medical society therein to be known as the Seventh.

8. To include the counties of Divide, Williams, McKenzie, and the district medical society therein to be known as the Eighth.

9. To include the counties of Dunn, Stark, Adams, Hettinger, Bowman, Slope, Billings, Golden Valley, and the district medical society therein to be known as the Ninth.

10. To include the counties of Traill and Steele, and the district medical society therein to be known as the Tenth.

SECTION 2. Charters to district societies shall be issued only upon approval of the House of Delegates, and shall be signed by the President and the Secretary of this Association. The House of Delegates shall have authority to revoke the charter of any component district society whose actions are in conflict with the letter or spirit of this Constitution and By-Laws.

SECTION 3. Each district society shall judge the qualifications of its own members.

SECTION 4. Each component society shall elect a board of censors of three physicians, each to serve a term of three years and the terms to be staggered. Vacancies on the board of censors shall be replaced at the annual election meeting of each component society. In addition to judging the qualifications of applicants for admission to the society, the board shall review and act upon matters or questions involving the relationship of members to each other or to hospitals or to hospital personnel in which members of the component society practice; and shall likewise review and act upon matters or questions or complaints brought to it by a member of the lay public which may affect either a physician, a hospital, or hospital personnel in the geographic limits of the component society. The authority of the board of censors of a component society shall be restricted to matters concerning the members of the particular component society or geographic limits of the component society. It may thus be stated that their function concerns intra-component society matters. The board of censors may refer the case to the Council of the Association. The physician member of the component medical society on whose case the board of censors has acted may appeal the action of the board of censors to the Council of the Association.

SECTION 5. When a member in good standing in a component society moves to another district in this state, his name, upon request, shall be transferred, without cost, to the roster of the local society into whose jurisdiction he moves.

SECTION 6. A physician may hold his membership in that local society most convenient for him to attend, provided no objection is made by the society in whose jurisdiction he resides.

SECTION 7. At its annual election of officers, each local society shall elect a delegate and shall elect an alternate delegate for each elected delegate to represent it in the House of Delegates of this Association in the proportion of one delegate to each fifteen members or major fraction thereof based on the paid-up regular and honorary membership as of December 31 of the year preceding the next annual session of the Association.

SECTION 8. The Secretary of each local society shall keep a roster of its members and a list of nonaffiliated physicians of the district in which shall be shown the full name, address, college and date of graduation, date of license to practice in this state, and such other information as deemed necessary. He shall furnish an official report containing such information upon blanks supplied to him by the Secretary of this Association immediately after the annual business and election meeting and at least sixty days before the annual session of this Association. In keeping such roster, the local Secretary shall note any change in the personnel of the profession by death or by removal to or from the district, and, in making his annual report, he shall be certain to account for every physician who has lived in the district during the year.

## CHAPTER XIII

### Amendments

These By-Laws may be amended by the House of Delegates:

1. At any annual session, in the same manner as prescribed by Article XI of the Constitution.

2. By an affirmative vote of two-thirds of the delegates seated at the annual session, provided the amendment is introduced at the first regularly scheduled meeting of the session, and then laid over to the second regularly scheduled meeting of the session before final action is taken.

3. By the unanimous consent, for introduction and final passage, of the seated delegates at the second regularly scheduled meeting of the annual session.

4. By an affirmative vote of two-thirds of the delegates seated at a special session called for the purpose of amending the By-Laws provided that each delegate and alternate shall have been furnished a copy of the proposed amendments at least thirty days prior to the beginning of the special session.

## CHAPTER XIV

SECTION 1. Order of Business of the House of Delegates.

First Meeting.

1. Call to order
2. Appointment of Committee on Credentials
3. Report of Committee on Credentials
4. Roll Call
5. Minutes of previous meeting
6. Appointment of Reference Committees
7. Report of President
8. Report of Secretary
9. Report of Treasurer
10. Report of the Chairman of the Council
11. Reports of Councillors
12. Reports of Commissions
13. Report of the Delegate to the A.M.A.
14. Reports of Special Committees
15. Announcement of names of members of the nominating committee
16. Unfinished business
17. Adjourn

Second Meeting.

1. Call to order
2. Roll call
3. Minutes of the first meeting
4. Reference Committee reports
5. Report of State Board of Medical Examiners
6. New Business
7. Resolutions
8. Fixing of per capita dues for ensuing year
9. Selection of time and place of next annual session
10. Report of nominating committee and election of officers
11. Unfinished business
12. Adjourn

The suggested order of business may be altered by additions, deletions, or changes in the order as determined by the Speaker and/or the Committee on Rules and Order of Business.

SECTION 2. The reports of the President, Secretary, Treasurer, Chairman of the Council, Councillors, Standing Commissions, Report of the Delegate to the A.M.A. and special committee reports need not be given in person; but shall be printed and referred by the Speaker to a Reference Committee for their consideration and report.

## CHAPTER XV

Reference Committees of the House of Delegates:

SECTION 1. Appointment. The Speaker shall appoint from the House the Committees named in this chapter and such additional committees as the House may approve. The Chairman shall be appointed by the Speaker. These Committees shall serve only during the annual session at which they were appointed.

SECTION 2. Procedure and Reports. Resolutions, measures, propositions, and officer and committee reports shall be referred to appropriate reference committees for consideration and report. The reports of all reference committees shall be presented to the House before final action may be taken on resolutions, measures or propositions, unless otherwise provided in the By-Laws, or unless unanimously ordered by the House.

SECTION 3. Organization.

(A) Each reference committee shall convene wherever necessary. It shall consider business referred to it and shall report to the House of Delegates when called on by the Speaker.

(B) Reference committees may summon officers, members of Commissions or Committees, members or employees of the Association for such information as may be needed to formulate their conclusions and recommendations.

SECTION 4. The following reference committees are hereby provided.

(A) Amendments to Constitution and By-Laws, to which shall be referred all proposed amendments to the Constitution and By-Laws.

(B) Credentials, to which shall be referred all questions regarding registration or credentials of delegates.

(C) Rules and Order of Business to which shall be referred all matters regarding rules governing action, methods of procedure and order of business, and Resolutions to include New Business.

(D) Such additional reference committees as may be required to consider the items of business before the House of Delegates. They shall be designated as Reference Committee No. 1, Reference Committee No. 2, etc. Business relating to a particular subject shall, as much as possible, be referred to the same reference committee.

## RULES AND PROCEDURE FOR MEDIATION

SECTION 1. Collectively the Council shall be the Mediation Committee of the Association. The chairman of the Council shall act as chairman of the Mediation Committee. In some instances, the action of the Council as a Mediation Committee will closely parallel its activities as a board of censors of the Association. A majority of the members of the Mediation Committee shall constitute a quorum for the transaction of business.

SECTION 2. The purpose of the Mediation Committee is to prevent or resolve misunderstandings, to clarify and adjust differences between physicians, between physician and a patient, and between physician and hospitals or hospital personnel to assist in maintaining the high levels of professional deportment. To achieve these purposes, the Mediation Committee shall have the authority to receive complaints, to investigate, to mediate, to arbitrate, and to render decisions. The decision of the Mediation Committee shall be considered as final. The Committee shall act on what may be called an intercomponent society level with respect to complaints or problems affecting physicians, hospitals, or hospital personnel or members of the lay public. The board of censors of the component society or a physician or any lay person may appeal from the action of the component society to the Mediation Committee.

SECTION 3. The committee will respect the confidential nature of any complaint. Every complainant will be invited to present fully his complaint by letter or by appearance before the committee, with the assurance that his identity and the nature of his complaint will be kept confidential to the fullest degree consistent with adequate investigation of the complaint. However, should any formal prosecution result, the committee will of necessity reveal the names of prospective witnesses, even though these names may include that of the complainant. However, if it seems expedient, the committee or its chairman shall have the power to request but not to force any complainant and any association member complained against to face each other during the course of the investigation or hearing, formal or informal, relative to any matter under investigation and to examine and interrogate each other.

SECTION 4. The chairman of the committee may, at his discretion, acknowledge receipt of all complaints in writing as the circumstances of each case may suggest. He will arrange for meetings of the committee with such frequency as may be necessary so that investigation of each complaint is carried out with reasonable dispatch and will notify complainants and any other persons whom the committee wishes to interview concerning meeting dates and places.

SECTION 5. The chairman shall determine whether investigation or action on the complaint should be carried on formally by the whole committee at a meeting, or by one or more members of the committee individually. At the discretion of the chairman, the preliminary investigation may be made by a member of the committee from a district other than that in which the complaint originates.

SECTION 6. When an informal investigation like that referred to above has convinced a member of the committee, other than the member in whose district the complaint arose, that no disciplinary action is indicated and that both the complainant and the physician involved signify in writing that they are willing to accept the conciliation agreement, the advice and suggestions of said committee member shall be reduced to writing and supplied to both complainant and the physician concerned, over the signature of the chairman of the committee.

SECTION 7. When investigation convinces any member of the committee that disciplinary action is indicated, the entire committee shall consider the matter formally in meeting before further action is taken and further action shall be determined by majority vote of those present. Conciliation shall be considered. Disciplinary action may consist of recommendations that the hospital concerned should consider whether the physician be denied hospital privileges, whether the physician concerned be dropped from the rolls of the component society and from the rolls of the North Dakota Medical Association, and suggestions to the North Dakota State Board of Medical Examiners for suspension or revocation of his license.

SECTION 8. When the matter concerns a matter of medical or surgical fees and if after investigation and attempts to effect an amicable settlement, the committee is unable to reconcile differences over the particular fee charged by an association member, the committee shall by a majority vote determine the fee which it deems fair and proper. Failure of the member to agree to such determination shall constitute grounds for action as indicated in Section 7.

SECTION 9. Whenever the committee determines to file formal charges against a member of the Association, the charges shall be reduced to writing and filed over the signature of the chairman of the committee and over the typed signatures of all other members of the committee who have taken part in the proceedings.

SECTION 10. The chairman of the committee shall keep appropriate and sufficient records of all of its final actions, other than confidential matters, and shall prepare an annual report and recommendations to the House of Delegates of the North Dakota Medical Association.

SECTION 11. Meetings of the committee shall be called by the chairman when it appears necessary for the entire committee to consider any complaint referred to it for adjudication and at such other times as may be necessary to consider other business within the scope of the activities of the committee.

SECTION 12. Decisions arrived at by a majority of the Mediation Committee shall be considered the expression of the entire committee.

SECTION 13. It shall be the duty of the Board of Censors of each component society to receive and investigate complaints of alleged misconduct on the part of physicians committed in the State of North Dakota. Whenever it appears, upon preliminary consideration of a complaint, that the facts do not support a charge of misconduct and do not warrant disciplinary action, the Board may dismiss the complaint without proceeding further, but in that event shall notify the complainants and the accused physician accordingly.

Whenever it appears upon such preliminary consideration that a complaint may have merit and is worthy of further investigation, the Board shall cause the complaint to be reduced to writing, if it has not been done previously, and also to be signed by the complainant if practicable. A copy shall forthwith be sent by certified mail, return receipt requested, to, or personally served upon, the person complained of, herein called the "Respondent". It shall be the Respondent's duty to submit to the Board within 15 days after the date of mailing such complaint, his written answer thereto, containing a full statement of the material facts in relation to the acts of misconduct alleged in the complaint; and it shall be the Respondent's duty also, if required by the Board of Censors to do so, to appear in person before them and answer oral or written interrogatories concerning the acts of misconduct alleged in the complaint; and any deliberate failure on the part of the Respondent to submit his written answer to a complaint, or to appear and answer interrogatories when requested by the Board to do so, and any wilful misrepresentations or concealment of material facts in relation to the matter complained of, shall be grounds for disciplinary action. Before the investigation is concluded in any case, the Respondent shall be afforded an opportunity to appear before the Board and present evidence on his behalf.

If, after the investigation in any case, the Board of Censors finds that the facts pertaining to the matter complained of do not merit disciplinary action, it shall file a written report to the effect and shall notify the complainant, the respondent and the Secretary of the North Dakota Medical Association that the complaint has been dismissed.

If, after investigation in any case the Board concludes that although the facts pertaining to the matter complained of do not merit disciplinary action, the respondent merits admonition, it shall file a written report to that effect and shall notify the complainant and the president of the component medical society that the respondent merits admonition for the circumstances outlined in the report; and thereupon the president of the component medical society in the name of the society shall notify the respondent and deliver such written admonition and there shall be no further proceedings.

If, after investigation in any case the Board of Censors concludes that the facts warrant a formal complaint, the Board shall make a report of its proceedings, including a summary of the material facts and the recommendations of the Board, and such report shall be filed with the mediation committee.

SECTION 14. All formal complaints seeking disciplinary action against a physician shall be filed in triplicate with the mediation committee and signed by any interested person, provided, however, that the committee may authorize the filing of an unsigned complaint. A formal complaint shall set forth the charges with sufficient particularity as to inform the respondent physician clearly and specifically of the acts of misconduct with which he is charged.

SECTION 15. When a formal complaint has been filed and it has been determined that formal hearing be had thereon, the mediation committee shall file with the Secretary of the Association the original and one copy of said complaint, with a written request that a citation issue be directed to the physician complained of, to which shall be attached a copy of the complaint, requiring said physician, within 20 days after the service thereof, to file with the committee the original and one copy of the written answer to such complaint. Such citation, together with a copy of the complaint attached thereto, may be served by said Secretary of the Association by certified mail, return receipt requested, addressed to the physician complained of at his last known post office address, or personally delivered to him. The original of said complaint and the files relating to the proceedings shall be retained by the Secretary of the North Dakota Medical Association.

SECTION 16. It shall be the duty of the physician served with such citation to file with the mediation committee at the office of the Secretary of the Association, within the time specified, the original and one copy of his answer to said complaint, in which he shall admit or deny the material allegations thereof, and he may include in his answer a request for a more particular statement of the alleged acts of misconduct, or raise any other objections, including a plea that the complaint does not charge misconduct warranting the imposition of any discipline.

SECTION 17. If the physician so charged, having been duly served with a citation as above provided, shall fail to answer said complaint, as provided above, or fail to appear at any hearing, the time and place of which he has due notice, he shall be deemed in default and the committee shall proceed to hear the same and make its findings and recommendations as hereinafter provided.

SECTION 18. At hearings the witnesses shall all be sworn and a complete record shall be made of all proceedings had and testimony taken. Only the mediation committee, a physician designated by the committee as a hearings officer, a hearings officer, a hearings committee consisting of three or more members of the mediation committee, or a hearings committee consisting of three or more physicians designated by the mediation committee, shall have the authority to conduct formal hearings on formal complaints. All of such hearings officers and hearings committees shall be appointed by the chairman of the mediation committee, and in appointing any such committee the chairman shall designate one of the members thereof to act as presiding officer. The presiding officer shall have authority to rule on all motions, objections, and other matters presented in connection with such formal hearing.

SECTION 19. The respondent in any formal hearing or proceeding after charges have been filed in writing shall be entitled to an attorney of his own selection so long as said counsel shall respect and obey the rules of procedure established by the committee.

SECTION 20. The mediation committee, Board of Censors, hearings committee, or hearings officer shall have authority to take verbatim testimony at any hearing or proceeding held under these Rules of Procedure, and must so do if requested by the respondent.

A qualified reporter of the Board or committee or hearings officer's selection may be employed to take a transcript of the proceedings or hearings, or in the alternative, at the tribunal's discretion, recording equipment may be employed. A copy of the transcript shall be made available to the respondent upon his written request.

SECTION 21. The hearing tribunal shall in its sole discretion determine whether or not open or closed hearings or proceedings shall be conducted and may at any time limit or bar admittance to its hearings or proceedings, with the exception of the respondent and his attorney.

SECTION 22. The hearing tribunal may, in its discretion, grant recesses upon its own motion or upon the motion of either party to the hearing or proceeding, and for such periods of time as it deems warranted.

SECTION 23. The hearing tribunal shall, when discussing and/or voting upon any issues heard or raised before it, do so in executive session.

SECTION 24. The respondent or his counsel shall have the right to examine or cross-examine any witness testifying at any formal hearing or proceeding after charges have been filed. The individual members of the Board of Censors or hearing committee or hearing officer shall have the right to examine or cross-examine any witness testifying at any hearing or proceeding.

SECTION 25. The hearing tribunal shall have the authority to summon witnesses, and shall also summon such witnesses as are requested by the parties to the hearing or proceeding. Written notice to the prospective witness specifying the date, time, and place of the hearing or proceeding, and that he or she has been requested to appear as a witness will be deemed sufficient notification. The hearing tribunal shall make every effort to have any person testifying make such testimony under oath before a notary public or other person authorized to administer oaths, but if this is refused, may interrogate them on their honor.

SECTION 26. The hearing tribunal shall have the authority upon its own motion, whereupon the motion of any party to a hearing or proceeding held before it, to object to the introduction of evidence or testimony upon the grounds that it is immaterial, irrelevant, or has no direct bearing upon the charges or issues before the tribunal. Any motion or objection as to evidence or testimony sustained by the tribunal shall result in the evidence or testimony so objected to being struck from any agreed summary or testimony which may be ultimately filed. Provided, however, the respondent shall have the right to make exception to such ruling of the hearing tribunal and either by stipulation or direct testimony or introduction of evidence preserve such testimony or evidence for consideration on appeal or other disposition.

## COMMITTEE ON CRIPPLED CHILDREN

This Committee met on December 9, 1967 at Fargo, North Dakota and confined its discussion largely to the general administrative management of the Crippled Children's Services and those children being cared for under Title XIX here in North Dakota. The Public Welfare Board, in a letter of November 30, 1967, to Dr. Lindelow, the Chairman of the Medical Economics Committee, indicated a combining of administration of the Medicaide and Crippled Children's Services in the Medical Services Unit of the Public Welfare Board.

The North Dakota Public Welfare Board feels that under the present legislation that all individuals, and for this consideration particularly, that all children can be treated by any member of the healing arts, which includes chiropractors and osteopaths, under the present North Dakota law. Many cases which were previously cared for by recognized medical specialist will now, by virtue of the proposed shifting to the Title XIX, permit what many members of the Committee feel will be a reduction in the standard of medical care. With this prospect in mind, it is felt that all members of the medical profession should realize the potentiality of numerous patients thus inadvertently remaining neglected as far as obtaining optimum treatment for complicated disease and injury entities.

Since this committee was considering only Crippled Children's cases, it was felt that adequate legislation should be developed by the Committee on Legislation which would, in effect, limit the medical care of all children under both Crippled Children's Services and Title XIX to be provided only by physicians with an M.D. degree. The individual members of this Committee and its Chairman, urgently recommend passage of the above-mentioned suggested legislation to insure the prevailing high standards of medical care for all children concerned.

Respectfully submitted,
(Signed) Paul L. Johnson, M.D., *Chairman*,
Committee on Crippled Children

## COMMITTEE ON DIABETES

E. A. Haunz, M.D., Chairman, Grand Forks; Donald M. Barnard, M.D., Fargo; B. Hordinsky, M.D., Drake; G. H. Heidorn, M.D., Minot; K. G. Foster, M.D., Dickinson; W. R. Fox, M.D., Rugby; W. H. Wall, M.D., Wahpeton; W. R. Jensen, M.D., Valley City; E. O. Hieb, M.D., Jamestown; P. F. Klosterman, M.D., Bismarck; E. V. Gilbertson, M.D., Devils Lake.

The Committee on Diabetes, initiated by Dr. Leonard Larson of Bismarck, has continued its primary function to encourage and coordinate annual diabetes detection drives throughout the state under sponsorship of constituent local medical societies. This function is a cooperative effort in support of National Diabetes Week, sponsored in November each year by the Committee on Detection and Education of the American Diabetes Association, Inc. Increasing participaton is in evidence among district medical societies throughout the nation. Last year, well over 1,250 societies held individual detection drives. Now that the American Diabetes Association is becoming a voluntary health organization with plans to conduct annual fund raising for diabetes detection and other activities in the interest of diabetic patients more financial assistance can be expected from the national organization in the future.

It is most unfortunate that no detection drives whatsoever were carried out in the State of North Dakota during the year of 1967. A drive was considered in one of the larger cities but was postponed presumably until 1968.

Since the total number of diabetic patients in the United States has risen from some 2,000,000 to 4,250,000 cases during the period of 1950 to 1967, the urgency of constant diabetes detection programs is self-evident. Diabetes is a disease increasing at an alarming rate. While some of the increasing incidence is more apparent than real (due to enhanced case finding techniques and increasing alertness of the physician to the possibility of diabetes), there is obviously a constantly rising incidence due to other factors such as increased longevity of diabetics, intermarriage of diabetics and/or carriers, and increasing propagation of the diabetic carrier state. It is now estimated tha 25 per cent of the American population will become diabetic at some time in life.

The Committee on Diabetes of the North Dakota State Medical Association sincerely hopes that there will be more active participation in diabetes detection in 1968. Diabetes detection drives still persist as an excellent activity of constituent medical societies to engender public good will toward the medical profession in carrying out free service for the detection of disease. It should be again emphasized that the State Health Department has been most cooperative in supplying available funds on request to medical societies which wish to carry out detection drives. The State Health Department is to be commended for not having any strings attached to such financial assistance. They have not even insisted that they be given credit for the financial assistance, so that it has been possible for the medical society to receive full credit for their project.

The Committee on Diabetes stands ready at all times to cooperate in assisting constituent medical societies to plan and conduct detection drives as well as requesting available supplies. Inquiries should be directed to the Chairman.

Respectfully submitted,
(Signed) E. A. Haunz, M.D., *Chairman*,
Committee on Diabetes

## COMMITTEE ON EMERGENCY MEDICAL SERVICE

The following is a summary of the National Conference of the Community and Emergency Medical Services, sponsored by the American Medical Association, Commission on Emergency Medical Services. The Conference opened at 9:00 a.m. on Thursday, January 18, 1968 at the San Francisco Hilton Hotel in San Francisco, California.

Total registration was 450 persons of which about 40% were physicians and 60% were laymen and paramedical professionals. There was representation from virtually every state and large community in the nation.

Irvin E. Hendryson, M.D., Conference Chairman, called the meeting to order. He explained the functions of the committee as helping to set standards, disseminate information, and create community councils at local levels.

Oscar P. Hampton, Jr., M.D., Chairman of the American Medical Association Trauma Committee, stressed care of the patient and stated that care must begin at the scene of the accident and continue during transportation and at the emergency room. Final definitive care should take place after emergency room care but all must be of high quality. Doctor Hampton further stated that a committee on the local level is needed to assure quality care at all stages of treatment. Such a committee should be made up of a coordinator (who is a super salesman and missionary combined), the medical profession, fire officials, police, the local government representatives and interested local citizens. He felt that the coordinator was the key man on such a committee and his job was to sell the medical profession first, to assure good press releases, to arouse the public to the need for quality care in emergency medical services, and to help pass legislation, such as the model ordinance on ambulance standards.

Doctor Hampton, speaking of ordinances and legislation, felt that there should be built-in penalty clauses for noncompliance with the regulation. Another point he made was that franchise or purchased service could be good service if local government got behind it. He stressed communications as vital to good service and concluded with a plea for well-run emergency rooms to complete the emergency health picture.

Doctor Hendryson spoke for Sam F. Seeley, M.D., who was unable to attend the meeting due to family illness. Doctor Hendryson discussed communications. Mention of the planned national emergency telephone number 911 were made and applauded as a giant step forward. The current state of overlapping and confusing communications methods was discussed and a plan for more harmonious use of existing service was suggested. However, the plan discussed was based on a large city system with police, fire and civil defense communications well established.

A panel was convened to answer questions from the floor. Each panel member spoke for 10 minutes then became available for questions. The interest was so great that the lunch break was extended almost an hour and still all the questions were not answered. In the panel presentations and questions that developed, some of the highlights were:

1. A need for a national system of first aid training for ambulance personnel as well as for the public in general.

2. Elected officials have the ultimate responsibility by passage of legislation, appropriations, etc., of improving emergency services. The degree and quality of service depends on standards and ordinances.

3. The training of ambulance personnel should be equal to that of the medic in Vietnam.

4. Cost of adequate care cannot be supported by pay-patient. Government must subsidize and a 50-50 basis is the best that can be hoped for.

It was interesting that pay for ambulance personnel was brought up as a factor in providing care. It was stated that the starting pay for a qualified ambulance attendant on the Baltimore Fire Department is $7,500 per year. In San Francisco the pay for the special emergency squad starts at $10,500 per year. The average cost of running one ambulance for one year was estimated at $5,600 per year plus the cost of personnel to man it.

Another area touched on by questions was the effectiveness of the Good Samaritan Law. The answer arrived at was that 41 states now have the law but there is no known case of a layman ever being sued for giving first aid and no known case of the physician ever losing a good samaritan case.

It was also felt that ambulance service should have equal status with fire, police and utility employees in a community. The question of driving marginal ambulance services out of business by legislation came up. The panel felt that you would tend to keep marginal services in business by government subsidy and in the process improve the marginal service.

The ideal ambulance service was discussed. A well-equipped, efficient ambulance possessing adequate communication equipment and staffed by fully-trained crew members capable of responding in a short time to any emergency, constitutes good service. The attendant should be a full-time paid semi-professional with continuing education under the direction of a physician. The crew leader should have one year of college training with an internship of six months in hospital emergency rooms. Adjourned.

The afternoon began with a presentation by Dwight Wilbur, M.D., on Organized Medicine's Responsibility in Emergency Health Services. Doctor Wilbur stressed the necessity of rural services being as good as those found in urban areas. This was not only for the protection of local citizens but also for the protection of those traveling through the area. He also suggested a name change from ambulance attendant to emergency medical technician to lend status to these individuals as better training is accomplished. He stated that equal training and status would help assure quality care everyhere.

William Haddon, M.D., Director of the National Highway Safety Bureau, gave a short presentation on standards and how the program was progressing despite fund cutbacks. A panel was convened on Transportation of the Ill and Injured. Interesting points brought out in this discussion were:

1. Twenty percent of American cities do not require two men on an ambulance.

2. Dade County, which includes Miami, spends ½ million dollars per year in contract fees for emergency service. They feel that they will soon go to helicopter service.

3. There are almost no objections to the use of utility-type ambulances, such as econoline or vanette type. They are much more economical in both original cost and in operation than the cadillac-type ambulance.

4. One city service offered both utility and cadillac service for a less and more expensive fee. In four years they received only three calls for the more expensive cadillac service.

Captain John M. Waters, Jr., spoke on the Use of Helicopters in Emergency Transportation. He stressed that helicopters are only a very efficient part of a system and that we need the rest of the system functioning well to realize the best use of helicopters. In some cases Army helicopters are at the disposal of civilians for emergency but planning is necessary. For instance, it has to be determined if army medics go with helicopters and if they have the right to give intravenous injections and use drugs as they do in the Army. Another prime consideration is—will the hospital be ready for their arrival and is a landing pad available. It was found that the Air Force has two helicopters in North Dakota and the National Guard has one. It is estimated that a small helicopter costs about as much to operate as one and one-half cadillac ambulances. Adjourned.

Friday Morning, January 19, 1968

The first order of business was a discussion of Programs of the United States Public Health Service by John J. Walsh, M.D. Doctor Walsh mentioned the Poison Control Center Program, Epidemology and Surveillance Programs in burns, motor vehicle accidents and driver reactions.

The next area of consideration was that of communication and a panel discussion was convened. A discussion of American Telephone and Telegraph Programs such as the Dial O Program and the new Nationwide Emergency Number 911 followed. It was stated that the 911 number can become functional when a community decides what agency it wants to be the clearing house for all emergency calls. There was also a discussion of radio communications and various type of equipment now in use. It was suggested that all state agencies use a single frequency if at all possible and be tied into one state-wide network of communications.

A review of New York's new system of state-wide communications was given by Rubert Ausman, M.D. Doctor Ausman felt the New York system worked because:

1. The state had power to license hospitals and ambulances.

2. The system is flexible.

3. Final control is in the hands of the medical profession.

4. The system relieves responsibility from those who do not want it.

5. Total cost is now prohibitive. It costs roughly $200,000 per year per area and there are six areas in the state, so the total cost of the New York system is about a million per year for total communications system with quality control and policing of system.

Mr. Irving Brownstein of the Federal Communications Commission explained the functions of his agency and stressed the need for orderly airways in radio communications. During the panel many pertinent questions dealing with local problems were answered. Adjourned.

Mr. Rus Walton discussed programs of state governments during the opening of the afternoon session with emphasis on highway engineering and medical aspects of driver licensing. Several important points were brought out during the panel discussion on Community Emergency Facilities.

Doctor Joseph K. Owen pointed out that public demand is bringing about improvement in hospital care. It was also pointed out that the emergency room is becoming the family doctor. This is where patients look for help in emergencies now. The five basic ways of staffing an emergency room are (1) rotation of staff, (2) general practitioners and internists only, (3) interns, (4) interns, residents and staff members in turn, and (5) salaried physicians whose practice is limited to the emergency room. It was agreed by the panel that the emergency room is the most important department in the hospital. The things that make a good emergency room are: 1. Organization—a good emergency room committee.

2. Director—an interested person in charge.

3. Facilities with growth potential.

4. Short wait for patients.

5. Someone to separate the real emergencies from family doctor cases.

6. Good staff.

Julian Waller, M.D., gave a brief history of ambulance service to open the discussion of Emergency Medical Services in the small community. Ambulances were started 1,000 years ago. Napoleon's army had ambulances. The word ambulance literally means mobile hospital. The rural crash, in Doctor Waller's opinion, was more dangerous and more deadly due to lack of immediate attention and length of the ambulance ride. The relationship between distance from a medical facility of the crash and the survival rate are inversely proportional. Doctor Waller called for better highway marking or signs to show where the nearest hospital is located. In many cases, it is hard for a stranger to find hospitals in this country.

In the final segment of the afternoon's program, Walter Carroll, M.D., called for more stringent accreditation of emergency rooms by local American Medical Association Committees and the Association of Hospitals to assure quality care in different areas of the country. Adjourned.

Saturday Morning, January 20, 1968

Several very interesting facts were brought out in the panel discussion of financing the community's emergency medical services system. Some of the facts were:

1. One ambulance will serve 7,000 people on a free-use basis. One ambulance will serve 10,000 people on a fee-for-service basis.

2. The minimum cost for a communications system for an ambulance to hospital hook-up is $1,100.00.

3. The cost of the average emergency room visit is $16.00.

4. Fragmentation is the chief cause of waste in emergency room service. If all things were standard the savings would be substantial.

5. The cost of an ambulance call in the United States varies from $10.00 to $30.00 and the average is $21.00.

6. Most hospitals report that the emergency room operates in the red.

7. There has been a 23.6% increase in the use of emergency rooms in the past five years.

8. Service clubs are extremely interested in local projects and in some cases will even raise funds, buy an ambulance and man it. The service clubs are a source of volunteer help and funds if needed on the local level.

9. The emergency room in Pontiac, Michigan is run as a private practice by several physicians with its own business manager. This is a paying proposition. This emergency room sees 44,000 patients a year.

The meeting was summarized by Doctor Hendryson. It was felt that it was an extremely useful and successful gathering of interested persons trying to improve Emergency Health Services in this country.

Respectfully submitted,
(Signed) Perry Engstrom, M.D., *Chairman,*
Committee on Emergency Medical Service

## COMMITTEE ON FOREIGN TRAINED PHYSICIANS

The migration of foreign medical graduates to the United States continues, and is of interest to our hospitals, medical schools, state boards of medical examiners and United States physicians in general. From 1935 through 1966, 53,444 foreign graduates had been examined for licensure in the United States and of these 31,939 have passed. This represents a failure rate of 40.2%. In 1966 (the last year figures are available) 1,352 foreign graduates were licensed by examination and 58 by endorsement. Thirteen boards examined more than 75 foreign graduates in 1966 with an average failure rate of 33%. The failure rate is interesting being 73.6% in Illinois and zero in Michigan which does not indicate any uniformity of examinations in the United States. Canadian graduates are not considered foreign graduates. The failure rate for graduates of United States Medical Schools varies from 2½% to 3%.

There are 84 medical schools in the United States, all Grade A. In addition, there are three approved two-year schools, North Dakota, South Dakota and Dartmouth. There are now 16 new medical schools in the process of development, some of which have already enrolled their Freshman Class. Seven of these schools are in the East, five in the Far West, two in the Middle West and two in the South. The total Freshman enrollment of these schools will be 1,354 and some United States Schools will increase their Freshman enrollment to 240. There are 12 Canadian Medical Schools, all Grade A and four additional in the course of development. There are 298 medical schools outside the United States and Canada. China and India each have 20, Germany and Japan each 18, Great Britain, including Ireland, 22 and Russia 5. We have no information on many of these as to their quality.

All foreign medical graduates must take an examination either in the United States or abroad to qualify for entrance into any medical activity in the United States. This provision (the E.C.F.M.G.) was put into effect in 1960. To qualify for this examination the applicant must be licensed in the country where he graduated and his medical credentials must be submitted in quadruplicate and translated into English. This examination is prepared by the National Board of Medical Examiners, is a multi-choice form and requires one day of writing. It is a screening examination and should not be compared with the three day tests given by the National Board to United States Graduates for National Board certification. Foreign trained graduates are not eligible for licensure in Arkansas, Louisiana and Nevada. All but nine states require an E.C.F.M.G. certificate and 41 boards require a foreign trained physician to serve at least one year as an intern in an approved hospital in the United States before being eligible for licensure. In addition to the above, many states have specific requirements or varying exemptions. Foreign medical graduates are very numerous in all state mental and tuberculosis hospitals. Many of these physicians have a special license valid only as long as the physician is employed in such a hospital. There are 1,137 foreign graduates engaged in research in the United States.

On January 1, 1967, there were 2,600 foreign graduates serving as interns in the United States and 11,109 serving as residents (total 13,709). The total number of interns and residents is 44,937, thus foreign graduates make up 31% of the total. The countries sending us the greatest number of foreign graduate trainees up to January 1, 1967 is as follows:

| | | | | |
|---|---|---|---|---|
| Philippine Islands | 3,517 | Ireland | 198 | |
| India | 1,468 | England | 161 | |
| Korea | 805 | South Africa | 86 | |
| Iran | 612 | Australia | 75 | |
| Thailand | 531 | Scotland | 73 | English |
| | 6,933 | New Zealand | 23 | speaking |
| | | | 616 | countries |

The greatest number of foreign graduates are in the surgical specialities, the lowest percentage in general practice.

There appears to be some question if the Asian Countries actually have enough physicians to export them. Recently India has forbidden the National Board of Medical Examiners permission to give their examination in India, apparently a wise provision for both countries. Actually the United States should be exporting physicians to all parts of the world rather than importing them.

Visa status is interesting. No visa 2,010, exchange visitors 9,059 and permanent residents 3,131. It has been very difficult for years to obtain any figures as to how many of the exchange students ever return to their native land as was the purpose of the program. They are able to avoid return in numerous ways: marry an American girl, requesting additional training in other specialties and by means of political influence. It seems pertinent to observe that an alien resident will go to any sacrifice of time and energy to become a United States citizen while native citizens remain so indifferent to the activities and responsibility of United States citizenship.

FOREIGN GRADUATES IN NORTH DAKOTA:

In 1967, eight foreign graduates were examined by the North Dakota Board of Medical Examiners. Two failed, one for a second time. This represents a failure rate of 25% which is a little less than the combined national failure rate. There are 44 foreign graduates now practicing in North Dakota with either a temporary or permanent license; 24 in a speciality and 20 in general practice.

The E.C.F.M.G. began operation in 1958 and since that date, 124,473 foreign graduates have been examined, 58% outside of the United States. Candidates who score 75% or higher, who pass an English test and whose medical documents are in order are given an E.C.F.M.G. Certificate. Most candidates receive an interim certificate which is valid for six months. The interim certificate may become standard when the physician has cleared his financial account with E.C.F.M.G.

Temporary certificates, those who come within five points of passing, are no longer issued.

The internship program continues to be in a state of flux. Many medical schools are revamping their curriculum. It is possible the internship will be completely eliminated and a senior medical student go directly into a three year residency. If so, this will surely reduce the number of physicians who will enter practice in the smaller communities.

DATA:

1. Number of Medical Schools in the United States—84.
2. Number of Medical Schools in Canada—12.
3. Number of Medical Schools outside the United States and Canada—298.
4. Number of Medical Schools in development in the United States—16.
5. United States Medical Schools graduated 7,743 in 1966 and 1967, 583 of whom were females.
6. Foreign graduates in the United States as residents and interns in 1966—13,709.
7. Foreign graduates licensed in the United States in 1966—1,410.
8. Foreign graduates failed in licensure examinations in 1966—87 (38%)
9. Since Canadian Medical Schools are considered the equivalent of United States Medical Schools, it is hoped the time is not distant when Canadian Medical Graduates will be licensed in the United States by either reciprocity or endorsement.
10. The states which license the greatest number of foreign graduates are:

| | | | |
|---|---|---|---|
| New York | 873 | Pennsylvania | 191 |
| Virginia | 456 | New Jersey | 135 |
| Illinois | 363 | Michigan | 126 |
| Maryland | 268 | Indiana | 124 |

11. Largest United States Medical Schools are:

| | |
|---|---|
| University of Michigan | 189 |
| University of Indiana | 182 |
| University of Illinois | 179 |
| University of Tennessee | 160 |

Respectfully submitted,
(Signed) C. J. Glaspel, M.D., *Chairman*,
Committee on Foreign Trained Physicians

## COMMITTEE ON MATERNAL AND CHILD WELFARE

The Maternal and Child Welfare Committee of the North Dakota State Medical Association met at the Westward Ho Motel in Grand Forks, North Dakota on Saturday, September 9, 1967 at 1:30 p.m. The following items were discussed:

1. Doctor Robert Lucy, as the North Dakota Program Chairman on Education of the American College of Physicians and Gynecologists, introduced the Educational Panel that could be used for in-service Maternal Education of North Dakota physicians. Doctor George Hilts will present this information to the Program Planning Committee of the North Dakota Academy of General Practice. Topics felt to be of the greatest need will be chosen.

2. Since maternal deaths as shown by the Division of Vital Statistics of the North Dakota State Department of Health in no way compare with the number of maternal deaths investigated by the Maternal Mortality Investigating Committee and since many of these deaths may be missed (not necessarily the desire of the physician), the following proposals were passed.

A. Every female death between the age of 15 and 50 years shall be routinely investigated by a questionnaire asking if a pregnancy was present or had occurred six months previous to death. This request will be sent in the name of the Maternal Mortality Investigating Committee of the North Dakota State Medical Association through the Division of the Vital Statistics of the North Dakota State Department of Health.

B. For better statistical purposes the decision of the Maternal Mortality Investigating Committee will be reported to the Division of Vital Statistics of the North Dakota State Department of Health. This would not mean changing the death certificate in any way but only that the death would have an additional coding for more accurate statistics.

C. At least a ten-year analysis will be done on all maternal death cases investigated by the Maternal Mortality Investigating Committee. This will be used as an educational tool for North Dakota physicians.

Respectfully submitted,
(Signed) Robert E. Lucy, M.D., *Chairman*,
Committee on Maternal and
Child Welfare

## MEDICAL ADVISORY COMMITTEE TO THE STATE HIGHWAY DEPARTMENT

The breakfast meeting was called to order at 9:20 a.m., by the Chairman of the Committee, R. W. McLean, M.D., at the Oak Manor Motor Motel, Fargo.

Members present were: Doctors R. W. McLean, Walter Hanewald, and Robert Ivers. Others present were: C. H. Peters, M.D., Wm. M. Buckingham, M.D., V. J. Fischer, M.D., W. A. Wright, M.D., R. C. Painter, M.D., Mr. K. J. Kucera, Mr. Vernon E. Wagner, Mr. W. David Coyner of the A.M.A., Mr. Lyle A. Limond and Myrtle Kohler, Recording Secretary.

The first item on the agenda was the reading of the minutes of the last meeting. These minutes were approved as read.

Mr. Kucera was introduced to the members and he stated that physicians throughout the state have been most cooperative in forwarding reports relative to medical evaluation of driver-license applicants. He added that, in follow-ups in cases of suspension, it is often difficult for a physician to make the sole decision and, if he recognizes a particular problem, Mr. Kucera recommended that the case be referred to other groups, such as Vocational Rehabilitation for further evaluation.

Dr. McLean, at this time, read a letter from C. Emerson Murry, Director, North Dakota Legislative Research Committee.

This letter concerned physicians reporting "safety risks" to the proper authorities for re-examination and review as to retention of drivers licenses. The members of the committee discussed legislation which would allow reports to be made without incurring civil liability or violation of the doctor-patient relationship. The Committee expressed great interest in legislation of this type and tentatively gave their approval, subject to review after the bills have been drafted. It was agreed that other states which have instituted this program be contacted as to their policies and procedures, and that the information be directed to the legal counsel of the North Dakota State Medical Association for his evaluation.

Dr. Ivers made a motion that the Legislative Research Committee consider legislation giving protection to physicians for civil suits arising as a result of giving information or opinions in regard to the competency of an individual in operating a motor vehicle. At the same time, it might be well to consider protection for physicians in other situations; for example, functioning on a Utilization Review Committee. Seconded by Dr. Hanewald. Motion carried.

It was pointed out that Dr. William A. Stafne, Fargo, North Dakota, is a member of the Legislative Research Committee's Sub-committee on Transportation and would be in attendance at any meeting of that group.

Considered was a resolution submitted by the First District Medical Society regarding automobile liability insurance in an adequate amount for epileptics who have been granted a license when his seizures have been dormant or under medical control for a reasonable period. This resolution asked for support and recommendations to the North Dakota Legislature regarding changes in drivers license laws for epilepsy and other conditions. It was agreed by the Committee that the most feasible approach would be that, following the initial physical examination by the family physician, the physician be consulted at six month intervals for evaluation as to their condition potentially affecting the operation of a motor vehicle.

Mr. Kucera assured the committee that the State Highway Department would cooperate fully with the committee in formulating any recommendations forwarded to his department.

A recommendation submitted by the First District Medical Society was discussed. This recommendation proposed that further preventative measures be recommended in regard to the operation of two wheel motor vehicles. In the opinion of the members of the Committee, however, that from a practical point of legislation, the possibility of passing such a law was not probable at this time. It was pointed out that operators of such vehicles are now required to take a test and must have a motor vehicle license.

In a discussion on visual acuity of driver license applicants it was agreed that an ophthalmologist be requested to serve on the committee. Dr. V. J. Fischer, President, North Dakota State Medical Association, directed that a letter be forwarded to Neil Williams, M.D., Fargo, from the office of the Executive Secretary requesting that he serve as a member of the Committee. (Dr. Williams later accepted the appointment).

There being no further business, the meeting adjourned at 10:45 a.m.

The Chairman of this committee wishes to thank his members for the fine cooperation during the past year. The Committee also wishes to thank the others present at our meeting for their contribution. If we, as Physicians, continue to work together with other departments of the state, I am sure we will accomplish a great deal towards highway safety. Your committee will continue to work with its best effort towards the purpose of highway safety and the prevention of so many deaths.

Respectfully submitted,
(Signed) R. W. McLean, M.D., *Chairman*,
Medical Advisory Committee to the
State Highway Department

## COMMITTEE ON MEDICINE AND RELIGION

The Committee on Medicine and Religion did not have a committee meeting. The members of the Committee, as well as all physicians of the state, have been active in their hospitals, counties and districts. The men of Medicine and Religion have shown good cooperation in the total management of the patient.

During the past year, the JAMA ran a series of articles pertaining to medicine, religion and the patient.

Since this is a year of legislative action, the committee will be watching new bills which fall within their interest.

Respectfully submitted,
(Signed) G. H. Hilts, M.D., *Chairman*,
Committee on Medicine and Religion

## COMMITTEE ON MENTAL HEALTH

There have been no meetings of the Mental Health Committee during the past year. In lieu of a committee report, please find following a summary of the Development of Community Mental Health and Retardation Centers in North Dakota.

Since the passage of Senate Bill 87 (North Dakota Century Code 25-12) in 1965 by the State Legislature, four community mental health and retardation centers have been launched and are presently offering treatment to mentally ill patients in or near their community; treatment tailored to meet each patient's needs. These centers are:

Memorial Mental Health and Retardation Center, 215 North Sixth Street, Bismarck, North Dakota 58501. Medical Director: A. F. Samuelson, M.D. Opening Date: July 1, 1966; Counties Served: Burleigh, Emmons, Grant, Kidder, Mercer, Morton, Oliver, Sheridan, Sioux. Population: Latest estimate—95,252. Patients Served: July 1, 1966 to June 30, 1967—225. The actual number of persons seen, however, is closer to 500 as parents and spouses are typically seen as well as the individual designated as patient. Staff: 1 Psychiatrist (part-time), 1 Clinical Psychologist, 2 Psychiatric Social Workers, 1 Psychiatric Nurse Consultant, 1 Business Administrator, 1 Secretary-Receptionist, 1 Stenographer (part-time). Mill Levy: None of the counties in the Bismarck Region have passed the ¾ mill levy permitted in the State Statutes for the operation and maintenance of the Center. Plans are underway to put this matter before the voters in the 1968 November elections.

North Central Mental Health and Retardation Center, 17 West Central Avenue, Minot, North Dakota 58701. Medical Director: Rosalie B. Kryston, M.D.

Opening Date: January 15, 1968. Counties Served: Bottineau, McHenry, McLean, Renville, Ward. Population: Latest estimate—92,577. Patients Served: Annual statistics are not available since the Center is new. Staff: 1 Psychiatrist, 1 Psychiatric Social Worker, 1 Business Administrator, 1 Secretary-Receptionist, 1 Stenographer (part-time). Plans are under way to recruit a clinical psychologist and a chief social worker. Mill Levy: Ward County was the first county in the State to pass the ¾ mill levy. The other counties in the Minot Region will vote on the levy in the 1968 November elections.

Northeast Regional Mental Health and Retardation Center, 509 South Third Street, Grand Forks, North Dakota 58201. Medical Director: B. E. McLaughlin, M.D. Opening Date: November 1, 1965. Counties Served: Grand Forks, Nelson, Pembina, Walsh. Population: Latest estimate—90,054. Patients Served: July 1, 1966 to June 30, 1967—716. Staff: 1 Psychiatrist, 2 Psychiatrists (part-time), 2 Clinical Psychologists, 2 Social Workers, 2 Pastoral Consultants, 1 Business Administrator, 1 Secretary-Receptionist, 1 Stenographer (part-time). Mill Levy: Grand Forks County passed the mill levy. The other counties in the Grand Forks Region will vote on the levy in the 1968 November elections.

Southeast Regional Mental Health and Retardation Services Center, P.O. Box 2013, Fargo, North Dakota 58102. Medical Director: John Lefsrud, M.D. Opening Date: August 15, 1967. Counties Served: Cass, Ransom, Richland, Sargent, Steele, Traill. Population: Latest estimate—117,061. Patients Served: Annual statistics are not available since the Center is new. Staff: 1 Psychiatrist, 1 Clinical Psychologist, 1 Social Worker, 1 Secretary-Receptionist. Other staff will be added in time. Mill Levy: Ransom, Richard, Sargent have passed the mill levy. The other counties in the Fargo Region will vote on the levy in the 1968 November elections.

It is planned that a fifth community mental health center will be in operation this year. The center will be located in Jamestown and will be known as the South Central Mental Health and Retardation Center. It will be under the administration of the State Hospital, but it will be located in downtown Jamestown. It will serve eight counties—Barnes, Dickey, Foster, Griggs, LaMoure, Logan, McIntosh and Stutsman.

Respectfully submitted,
(Signed) Paul J. Beithon, M.D., *Chairman*,
Committee on Mental Health

## COMMITTEE ON NURSING EDUCATION

There have been no official meetings of the Committee on Nursing Education during the past year. However, your Chairman has attended many meetings and been vitally interested in the trends of the changing aspects of Nursing Education. As your Chairman I was appointed to represent the North Dakota State Medical Association on the Joint Committee on Needs and Resources. This committee is composed of representatives from the North Dakota Hospital Association, North Dakota State Nurses Association, members of the State Board of Nursing and State Department of Health, as well as the North Dakota League for Nursing and the ANA. This has been an exceedingly active committee this past year and I have attended two of their meetings in Fargo held in the past three months. This committee is working hard in an effort to be an advisory committee to all institutions providing nursing education. Extensive surveys have been carried out concerning the needs for the establishment of new nursing schools and the needs and present resources to insure an adequate supply of nurses to the state of North Dakota. We have requested and are hopeful that the State Board of Higher Education will consult us concerning the establishment of any new programs in nursing regardless of the level concerned. It is still too early to publicly announce our recommendations concerning the type of nursing education to be followed or the location of institutions to provide nursing education at the various levels. This, however, will be accomplished within the next few months. I am hopeful that I might be able to arrange a meeting of our committee on Nursing Education during the time of our 1968 annual meeting at Minot.

On October 6, 1967, I attended a conference on Nursing Education sponsored by the AMA which was held in Chicago, Illinois. Forty six states had representatives attending this meeting along with committee members and AMA staff personnel. This was a splendid meeting and included talks by the President of our AMA, Milford O. Rouse, M.D., Eleanor C. Lambertson, R.N. Ed. D., who is Director of the Division of Nursing Education, Teachers College, Columbia University, who discussed current nursing education and practice. The interest physicians now have in nursing education was quite evident at this national meeting.

I sincerely feel that excellent progress is being made in Nursing Education and hopefully some of the solutions to the current problems will be resolved within the next year.

Respectfully submitted,
(Signed) R. S. Larson, M.D., *Chairman*,
Committee on Nursing Education

## COMMITTEE ON PHARMACY

Pharmacy, like medicine, is under fire—a dark, ominous cloud hangs over both of our heads. Our greatest defense is to do what is ethically and morally right.

Problems such as the use of genetic names versus trade names, service charge or percent of drug costs and doctor-controlled pharmacies are still ever present. These problems should all be solved on a local level; however, it appears that in default, control will be instituted from the Federal level.

No formal meeting of the Committee on Pharmacy was held last year since apparently no serious local problems have arisen. Any proposed resolutions pertaining to pharmacy should be referred to this Committee prior to the annual meeting in May and, if necessary, a special meeting of the Committee can be arranged.

Respectfully submitted,
(Signed) O. A. Sedlak, M.D., *Chairman*,
Committee on Pharmacy

## REPORTS

### North Dakota State Advisory Council for Hospital and Related Construction

In reporting on the North Dakota State Advisory Council for Hospital and Related Construction, I wish to report the following: There were two meetings held during the year, one on June 13, 1967 and the other one on January 26, 1968.

The June meeting was taken up with organizational decisions and approval of the report from the State Health Department for the past year.

The January meeting involved a decision on where to put the small amount of funds available at the present time in the Hill Burton fund.

After discussing the matter with four or five different areas, the Board recommended that the balance of the Hill Burton fund available be awarded to Hazen Memorial Hospital for an expansion.

It might be interesting to note, members of our Association, that the organizations represented in this Council are as follows: Catholic World Life Conference, State Legislature, North Dakota Tuberculosis and Health Association, North Dakota Homemakers, North Dakota Farm Bureau, Division of Vocational Rehabilitation, Congress of Parents and Teachers, North Dakota Farmer's Union, State Hospital Association, State Nurses Association, North Dakota AFL-CIO Federation of Labor, and the Lutheran Hospitals and Homes Society.

Respectfully submitted,
(Signed) M. A. K. LOMMEN, M.D., *Representative*

## Report of Representative of Blue Shield Board of Directors

During the past year, North Dakota Physicians Service (Blue Shield) faced many continuing problems and resolved a number of new ones.

The plan finished the first full year of operation as carrier for the Government Medicare Part B program. A number of administrative and operational problems were met and solved through refinements in claim handling and data processing. It is well to note that claim processing has been speeded up to the point where a Medicare claim received is paid within 7 days.

The area of most concern pertaining to the Medicare program and now nearly all Blue Shield business, is the determination of the usual, customary, and reasonable fee. All procedures are reviewed every six months, based on doctors' submitted fees, and the necessary changes in fee determination made at these times. The Board of Directors has been kept well informed as to changes necessarily made in fees. Over-all, doctors in North Dakota have been very conservative in charges. There can be no question that as the cost of materials, salaries, and the cost of living varies, the cost of medical care reflects these economic facts of life. However, to quote from a paper given by Robert E. Westlake, M.D., "the right to dispose of one's services on his own terms has been assumed to be fundamental in a democracy. For a professional, this means the exchange of some sort of fee for his services. Fee-for-service medicine has been questioned by many social planners and, indeed, by many physicians, because it provides less opportunity for quality control than salaried arrangements. However, the responsiveness of behavior between the professional and his patient or client, continues to support a fee-for-service arrangement.

"In the practice of medicine, there is a spectrum of professional services which ranges from the intimate relationship of the personal physician to remote technical services provided by highly specialized laboratory physicians. It is probable that a responsive relationship is most needed between patient and physician at the personal physician level and decreases as one moves to clinical consultant, to surgical specialist, and then to laboratory physicians. However, all of these physicians cling to their image of themselves as a doctor who serves the patient directly, and therefore is most comfortable in a responsive, fee-for-service relationship.

"The forces in today's society have produced what has been called a one-man, one-vote democracy, in which freedom from disease has been added to other basic freedoms. The involvement of government, either as an active third party or as an 'amicus curia', has brought about the concept of a single standard of care for all citizens no matter what their own economic status.

"In this setting, physicians in this country have seized upon the phrase 'government is not an indigent' to demand their 'usual fee'. If this is a reasonable demand and certainly the majority of physicians think it is, they should be prepared to define a 'usual fee'. As usual in human behavior, the basic problem is communication. Once we have defined terms so that everyone understands what we are talking about, the principles for any human relationship can be agreeably developed.

"Now what is meant by a 'usual fee'? The individual physician means his usual fee, i.e., what he chooses to charge a given patient for a given service at a given time. This expresses his own understanding of personal freedom; and represents economic piracy to many patients and certainly to liberal politicians.

"There is a phrase which has been used for many years in medical economics and in medical jurisprudence. This is 'usual, customary, and reasonable.' Until a few years ago, this phrase was not carefully defined. However, the California Medical Association took the lead and developed what has become a fairly rational statement explaining its meaning. In brief, it means *usual* for that physician, *customary* for that service by physicians of that general type in that area, and *reasonable* for that specific service in that area for that physician.

"While this has been a useful description, it certainly has not obviated the need for sophisticated professional judgment by a physician setting his fees or by those who must judge the fairness of a fee."

One area of great interest is the evident improvement in relations between the Medical Association and North Dakota Blue Shield. The suggestion was made that the Chairman of the Medical Economics Committee of the North Dakota State Medical Association be a member of the Rates and Planning Committee of Blue Shield, and the Chairman of the Rates and Planning Committee of Blue Shield be a member of the Medical Economics Committee of the North Dakota State Medical Association. These Committees have met a number of times in 1967 and suggestions made by both groups have aided immensely in the operation of Blue Shield.

As an adjunct to closer relationships between Blue Shield and Medical Societies, the American Medical Association, at its December 1967 meeting, took the following action: "The A.M.A. urged medical society officers and executives to participate in the activities of their Blue Shield Plans and opposed action removing approval of Blue Shield Plans by their sponsoring medical society.

"The A.M.A. asked that all Plans 'be and continue to serve as economic arms of the medical profession in offering sound alternatives to the public in the voluntary financing of health care.' "

After much discussion and consideration, the question of whether the Blue Shield Board of Directors should have lay representation was resolved to suggest to the corporate body that several lay persons be added to the Blue Shield Board.

Due to the increasing volume of work in Blue Shield and Blue Cross and also offering shared data processing as a service to hospitals and clinics, it was decided to expand the data processing capabilities of Blue Cross and Blue Shield. An independent corporation was retained to develop the program (software) and implement the necessary systems for the shared computer department. The firm Information Management Technology (I.M.T.) was retained and they are progressing with this work.

Through cooperation with the Medical Economics Committee of the North Dakota State Medical Association and various segments of medicine, the following refinements in Blue Shield were accomplished:

1. An agreement with the psychiatrists as to a fair system of reimbursement for covered services furnished. A committee of psychiatrists has been set up to assist Doctor Sedlak and the Blue Shield Claims Review Committee in adjudicating claims pertaining to psychiatric care.

2. Addition, as a subscriber benefit, of payment for surgical assistants.

3. Sterile trays and casting materials included as a contract benefit (effective January 1968).

4. Payment for cancer chemotherapy (effective January 1968).

5. Extension of benefits for emergency first aid from 48 hours to 72 hours (effective January 1968).

6. Liberalize tuberculosis days' limitation to apply only to pulmonary tuberculosis (effective January 1968).

7. Changed limit for consultations from 1 per year to $35 maximum payment per year (effective January 1968).

8. Premium reduced for all Series 100 contracts to the Series 80 level. One contract only issued, based on 100% of the usual, customary, reasonable, and prevailing fees of North Dakota Blue Shield participating physicians, and consideration of subscribers' income is no longer necessary. A few contracts will still remain on the old basis until their renegotiation date. (Effective January 1968).

Respectfully submitted,
(Signed) G. L. COUNTRYMAN, M.D.
Representative of the House of Delegates
to the Board of Directors of Blue Shield

## Report of the Representative to the Crippled Children's Services Division Public Welfare Board of North Dakota

The meeting of the Medical Advisory Council on Crippled Childrens Services met on May 20, 1967. Members present were: Albert H. Fortman, M.D., Capital City Clinic, Bismarck, North Dakota; Stanley A. Keck, M.D., Minot, North Dakota; Robert M. Fawcett, M.D., Lake Region Clinic, Devils Lake, North Dakota; James R. Amos, M.D., Bismarck, North Dakota. The members absent were: Donald E. Skjei, M.D., Williston Clinic, Williston, North Dakota; Thomas L. Schafer, M.D., Grand Forks, North Dakota; and Donald L. Lamb, M.D., Fargo, North Dakota.

The members of the Public Welfare Board staff who were present were: P. W. Freise, M.D.; Mr. T. N. Tangedahl; Mr. Gottfried J. Kuhn; Mr. Reuben H. Carlson; Miss Margaret Lister; Helen Whalound; Mary Jane Bormen; Phyllis Wigen; and Eldean Enge.

B. J. Clayburgh, M.D., of the Orthopedic Clinic, Grand Forks, North Dakota, was invited to attend as a representative of the American Academy of Orthopedic Surgery. He commented on the Crippled Childrens Service Program, and on Legislation affecting services to children, including Title XIX, and House Bill No. 5710. He recommended that the Crippled Childrens Services consider authorizing payment of the initial examination and emergency treatment provided by a general practitioner in case of accidents prior to referral of the child to the specialist.

Discussion of Title XIX—the financial eligibility requirements allow the income not to exceed $1600.00 for one family; $2200.00 for two; and $400 income above $2200.00 for each additional member of the family. It was pointed out that this program, unlike Crippled Childrens Services, pays for medical treatment of all conditions and by the physician and/or other licensed medical practitioners selected by the family, whether or not he is a specialist.

Discussion by Mr. Tangedahl included changes of organization that may take place in the Federal Bureau of Health, Education and Welfare. He explained funding by the federal and state governments for the Crippled Childrens Services. A request of an additional $400,000 of state money by the North Dakota Public Welfare Board to the 1967 Legislature, so that a health program for children up to 21 years of age could be set up, was denied by the Appropriations Committee. Consideration is being given to transferring, to the extent possible, children receiving Crippled Children's Services and public assistance to Title XIX. This would conserve Crippled Childrens Service monies and better utilize the more liberal federal matching of state money under XIX.

Discussion for speech therapy for the retarded child—Dr. Keck recommended a trial period of one year, in which the program would provide speech therapy to the retarded child. After one year, this service would be reevaluated and consideration would be again made at this time.

Consideration of short palate was added to the program—It was the opinion of those present that the short palate is part of the whole group of problems of the cleft palate syndrome.

On Home Care in lieu of hospitalization—There was discussion on home care on the recommendation of the attending specialist.

Parents paying the first $25.00 for medical care—It was recommended that the revision of the Crippled Childrens Services not be made at this time.

Sharing of medical information with other facilities, providing services to children and youth.

Authorization of thoracic surgery by general surgeons—It was moved and passed that the Crippled Childrens Service indicate in the manual by an asterisk, those general surgeons who have proper thoracic training and authorize these only for thoracic surgery, excluding open heart surgery.

Purchase of corrective shoes by Crippled Childrens Service—The Crippled Childrens Service will not be purchasing corrective shoes.

Mailing of Crippled Childrens Service list of authorized specialists, to all the physicians in the state—It was recommended by the council that this be continued.

Board eligibility of Crippled Childrens Services authorizing specialist—It was moved and passed that the rule concerning securing of board certification within five years of becoming eligible to take the board examination would be suspended for one year and reconsidered at the medical advisory council meeting in 1968.

Respectfully submitted,
(Signed) DONALD E. SKJEI, M.D., *Representative*

## Report of Representative to Medical Center Advisory Council

The Medical Center Advisory Council held two meetings during the 1967-68 year, one in July, 1967, and the other in February, 1968, both of which were attended by your representative. The make-up of this board is changing gradually and now includes Doctor T. H. Harwood, Dean of the Medical School and Director of the Medical Center; Mrs. V. W. Parker of Grand Forks, representing the State Welfare Board; Doctor James R. Amos, of Bismarck, State Health Officer; Mrs. Gilman Peterson, of New England, representing Agriculture; Mr. Fred Orth, representing the State Board of Higher Education; Mr. Howard Semingson of Minot, representing the North Dakota Hospital Association; Doctor John Goven, of Valley City, who received the most recent appointment from Governor Guy to replace Mr. T. L. Degnan of Grand Forks, whose term expired, and myself representing the State Medical Association.

## STUDENTS

Forty-seven freshmen were accepted for September, 1967 entrance, an increase of three over previous classes. It is planned to take the same number in the fall of 1968. It appears that further increase cannot be made without enlarging the physical plant.

Scholastic experience has led the Admissions Committee to require a 2.5 grade point average in the required sciences as well as an overall 2.5 average. Competition with other students and other schools has made it almost mandatory that the pre-medical requirement be four years, except in the case of unusually brilliant students.

Students are doing well after transfer and those taking National Board examinations obtain grades averaging about the same as students from other schools.

There has been a little tightening up in the transferring of students. Many four-year schools have been enlarging their basic science classes, leaving fewer openings for third and fourth year students. There has also been a decrease in the number of students taking graduate work after their second year in medical school due to selective service regulations, so this source of transfer openings has also decreased. Actually, there has been no problem in transfer as yet, and serious difficulty is not anticipated. The possibility of making definite arrangements with several schools to take the majority of our students is being explored. The present sophomore class is applying to a total of 19 schools for 1968 fall transfer. The University of Minnesota will again take 9 students, three from each third of the class.

Some of the four-year schools are revising their curricula to give more bedside and hospital instruction during the sophomore year. This has not proved a problem yet, but if this trend becomes more general, our curriculum will also have to be revised. This trend is under close observation and no problems are anticipated in effecting the necessary curriculum changes if it appears advisable.

Administrators of the Medical Center had a recent meeting with officials of the University of Minnesota Medical School regarding the possibility of a cooperative effort to train more doctors in this region. Minnesota has been considering a second medical school for a number of years and apparently there is interest in exploring the possibility of having us increase our freshman and sophomore classes by accepting more Minnesota students for Basic Science education and transferring to the University of Minnesota school for the third and fourth years. We will be unable to do this without adding to our physical plant, which would present both space and financial problems.

There are 75 graduate students as of February, 1968. Sixteen in Anatomy, 30 in Bio-Chemistry, 7 in Micro-Biology, and 22 in Physiology-Pharmacology. There are also four post-doctorate fellows in the Pathology Department.

## FACULTY

No serious faculty problems have come to the attention of the Board. There have been no more than the normal changes. So far, we have been able to obtain an adequate faculty and maintain salaries at or close to the national average.

## MEDICAL CENTER LOANS

There is now about $500,000 out in Medical Center Loans and, in spite of the fact that this program has been in effect for twelve years, it is still not maintaining itself. The class of 1957 is well behind in their obligations. If these were paid up, this program would be in much better condition. Inasmuch as all evidence indicates, this loan program has had little effect in attracting physicians back to the state or into the smaller towns and there are numerous other sources of loan funds, it may be that this program could well be phased out, thus releasing these funds for other use.

## PHYSICAL THERAPY

It is hoped that the Physical Therapy training program will become a four-year program by September, 1968. Salaries for this teaching are paid out of Rehabilitation Hospital funds. It is hoped that when this program is in full swing, enough physical therapists will be graduated each year to eventually supply all areas of North Dakota and northwestern Minnesota.

## COLLEGE OF NURSING

The College of Nursing has grown from 60 students in 1958 to 160 now and the number of graduates has doubled. This is a four-year program leading to a degree and resulting in the usual problems with four-year graduate nurses. Relatively few of these girls stay in these parts, usually marrying before or shortly after graduation and moving elsewhere with their husbands. Apparently, there is no thought of a two- or three-year program within the University Medical Center.

## REHABILITATION HOSPITAL

This hospital is now self-supporting financially and operating at capacity with a waiting list. Studies by the administrative personnel indicate that they could probably make good use of a 100-bed facility instead of the present 40-bed structure, and attempts may be made to attain funds for such construction. If this can be arranged, it will probably be built in intimate relationship to one of the Grand Forks hospitals. The present structure could then be utilized as a student health service with possibly additional space for the Medical School.

Another certified physiatrist has been added in the person of Doctor Percy Miller.

## EVALUATION CENTER FOR EXCEPTIONAL CHILDREN (Mental Retards)

This program is under the joint administration of the State Health Department and the School of Medicine and is under the direction of Doctor Louis Silverman, Grand Forks pediatrician. It is financed by special project funds of the Children's Bureau through the Maternal and Child Health division of the North Dakota State Department of Health. The purposes are: (1) to provide diagnostic and evaluation services for children with retarded development; (2) to provide information and counseling to parents of such children; (3) to serve as a teaching service for the medical school and departments such as psychology, speech and hearing, social service, and certain other departments of the University.

It has a staff of six part-time people (a pediatrician, psychologist, speech therapist, social worker, special education, and nutritionist), and three full-time persons (a clerk-stenographer, a nurse, and a secretary). Referrals are accepted from physicians, various agencies, public health units, schools, and others who may have professional contact with children.

### SPACE

Space has become a serious problem in the medical school. Numerous departments need additional room for both research and teaching. None is available. Enlargement of the school in its present location would present some problems, but various possibilities are under consideration. It is hoped that funds and ground can be arranged for necessary enlargement.

### FINANCES

Income from the mill levy fund is augmented by a total of $991,227 in grants from various sources in the 1966-67 years. These include grants from the National Institute of Health, graduate training grants, and grants from various other sources for research, including five Hill professorships. Many of these grants carry supplemental funds that help pay for teaching, laboratory personnel, and overhead. Without them, the school could not operate at its present level and would have great difficulty in attracting competent personnel.

The necessity for full information regarding the Medical Center, particularly to legislators, but also to the general public, is recognized. This is being arranged at the present time and it is hoped that information can be disseminated before the legislative session.

There is inadequate general knowledge of the great amount of time, money, and space used in teaching other than medical students. The College of Nursing, Medical Technician, Physical Therapy, and Occupational Therapy Programs are all a part of the medical center and all require teaching by Medical School personnel. In addition, many hours of instruction are given students from the General Arts College, Physical Education, Speech and Hearing, Home Economics majors, and others. The medical school personnel are so involved in this sort of teaching that no one really knows how much of the time and space of the medical center and its personnel is used in such teaching. It is important that knowledge of this be spread widely throughout the state.

Respectfully submitted,
(Signed) P. H. Woutat, *M.D.*,
Representative to the Medical
Center Advisory Council

## Report of the Liaison Officer to the North Dakota Bar Association

Your representative was approached by the Interprofessional Relations Committee of the North Dakota State Bar, who have done extensive work, and who deserve our thanks in attempting to develop and improve a voluntary, but legal means, to handle threatened medical malpractice actions. The development and utlization of this proposed Rules of Civil Procedure will demand the cooperation of the allied medical and legal professions to (1) determine possible medical malpractice in any given case which it hears, and (2) to provide three medical expert witnesses to testify for the plaintiff should the preliminary subpanel of two doctors, two lawyers and a district judge find that the proposed medical-legal action has apparent merit in behalf of the plaintiff. The medical members of the panel, plus the three expert witnesses, will be provided from panels recommended by the North Dakota State Medical Association. This proposal is closely adopted from the New Jersey legal rules and is similar to that which is currently in effect in New Mexico. The State Bar and State Medical Societies of those several states have indicated that this method has proved desirable and functionally satisfactory for both professions.

Your liaison representative recommends the acceptance and adoption of the following proposed Rule of Civil Procedure.

### PROPOSED ADDITION TO NORTH DAKOTA RULES OF CIVIL PROCEDURE

### RULE – PROFESSIONAL LIABILITY CLAIMS AGAINST MEMBERS OF MEDICAL PROFESSION: PROCEDURE

1. Scope of Rule

The procedure set forth in these rules is for the common interest of the public, the medical profession and the legal profession in the handling of medical professional liability claims with the view to (A) discouraging baseless professional liability cases and (B) making expert medical testimony available to claimants in those professional liability cases where there is a reasonable basis for the claim.

2. Panel of Doctors, Judges and Lawyers

For the purpose of this rule the clerk of the North Dakota supreme court shall maintain a panel of doctors designated by the North Dakota State Medical Association and a panel of attorneys designated by the supreme court.

3. Claims; Hearings; Notifications; Subpanels

(A) All persons, or their representative, claiming damages by reason of injury or death resulting from alleged medical negligence shall be encouraged to make an informal and voluntary submission of their claim, against any and all doctors against whom they believe there is a reasonable basis for claim, to a subpanel for evaluation either prior to or after the institution of legal action. It is preferable that the submission be prior to a commencement of legal action.

(B) The claim shall be made on forms to be provided, upon request, by the clerk of the supreme court.

(C) The clerk of the supreme court shall notify the doctor, or doctors, of the claim and request their consent to a hearing before the subpanel. The notice shall advise the doctor to consult with his attorney and insurance carrier before giving consent.

(D) Upon receipt of the claim and consent, the clerk of the supreme court shall notify the claimant and his attorney and the doctor and his attorney of the date, time and place of the hearing and invite them to attend. The notification shall contain the names of the members of the subpanel hearing the matter.

The doctor, his personal counsel and counsel for insurance carrier, as well as claimant and his counsel, may attend.

4. Submission of Claim to Subpanel

(A) The claim shall be submitted to a subpanel of persons provided for in this rule for evaluation. The subpanel shall be composed of two doctors, two attorneys, and an active or retired judge of the District Courts of North Dakota, who shall be designated as chairman. The chairman shall vote only in case of a tie.

(B) The subpanel shall be named by the clerk of the

Supreme Court. The place and time of hearing shall be fixed by the clerk of the Supreme Court.

5. Procedure Before Subpanel; Finding

(A) The claimant shall set the facts before the subpanel in whatever form he thinks appropriate. He may do so in the form of a narrative statement by his lawyer, or in the usual courtroom form of question and answer, or by written statement. Witnesses may be called or sworn or unsworn statements of witnesses may be produced.

With the consent of claimant, the attorney for the doctor (personal or insurance) may question the claimant or a witness.

When the claimant has finished with his presentation, the doctor may in like manner put forth his version of the facts in any form he thinks appropriate.

With the consent of the doctor, the attorney for the claimant may question the doctor or his witness.

(B) Both parties, through their respective attorneys, shall produce the original or copies of all hospital and other records, including readings, x-rays, and reports necessary to a full presentation of the facts.

(C) After an evaluation of the information submitted, the subpanel shall advise the parties and their attorneys either "We find that there is a reasonable basis for the claim" or "We find that there is no reasonable basis for the claim." No opinion shall be given with respect to the extent of damages.

6. Recommendation After Finding

When the subpanel advises that there is no reasonable basis for the claim, it shall recommend to the claimant either that no legal action be instituted, or, if legal proceedings are pending, that they be discontinued. When the subpanel advises that there is a reasonable basis for the claim it shall recommend that an amicable settlement of the claim be considered.

7. Expert Witnesses Furnished in Certain Cases

(A) The Claimant may (but need not) agree in writing in advance not to institute legal proceedings or to dismiss any proceedings that may be pending in the event the subpanel is of the opinion that there is no reasonable basis for the claim.

(B) If the claimant does agree in writing, as provided in paragraph (A) of this rule, and if the subpanel is of the opinion that there is a reasonable basis for the claim, the Clerk of the Supreme Court will supply the names of three expert medical witnesses from a list compiled by the North Dakota State Medical Association to the claimant, all or any of which agree to serve at a reasonable fee to be paid by the claimant.

8. Withdrawal of Counsel

In the event the subpanel is of the opinion that there is no reasonable basis for the claim, the attorney for the claimant shall be precluded from initiating any action on behalf of the claimant or, if an action has previously been instituted, he shall withdraw therefrom.

This shall not prevent the claimant from obtaining other counsel, if he so desires, to prosecute his claim.

9. Proceedings to be In Camera

All proceedings, records, findings and recommendations of the subpanel shall be confidential and shall not be used in any other proceeding or be otherwise disclosed without the consent of all parties. All proceedings shall be in camera and no records shall be made thereof. All exhibits shall be returned at the conclusion of the proceedings to the parties submitting them.

10. Secrecy

The circumstances under which an expert medical witness was made available, or the fact that he was made available under this rule shall not be made known to the trier of the facts.

11. Rehearing

The subpanel may grant a single rehearing of any claim, under the same conditions controlling the initial hearing, upon the affirmative votes of three members of the subpanel, who voted on the original determination.

A rehearing of any claim shall not be granted if the claimant or doctor has substituted counsel.

Respectfully submitted,
(Signed) Paul L. Johnson, M.D., *Representative*
Liaison Committee to the North
Dakota Bar Association

## Liaison Comittee to the North Dakota Dental Association

There was no special activity on the part of the Liaison Committee to the North Dakota Dental Association during the year.

Respectfully submitted,
(Signed) David G. Jaehning, M.D.,
*Representative*

## Report of the Delegate to the American Medical Association

Your delegate and alternate attended the annual and clinical sessions of the American Medical Association's House of Delegates. The actions of the House have been well reported in the AMA News, JAMA and elsewhere.

This being my last report as AMA delegate, I feel compelled to make several well-intentioned observations on the AMA delegate's responsibilities.

At each session of the AMA House, actions are taken which are to be referred to State and District Medical Societies for consideration and/or implementation. I have been increasingly concerned that the delegate's report is rather automatically accepted—even though some of these suggested AMA actions are itemized—little consideration is given them by the reference committee and/or the North Dakota House of Delegates itself.

After discussion with many of my colleagues about this "problem of mechanics", I offer the following suggestions:

1) The AMA delegate could furnish the Speaker of this Association's House of Delegates with a list of such AMA recommendations to State Medical Societies—along with pertinent data thereto—so that our Speaker may refer these recommendations to the proper reference committees for their deliberations. Each reference committee, in turn, can then suggest to the House that these AMA recommendations be rejected or assigned to the proper committee or commission of this Association for implementation.

2) An obvious weakness to the above listed suggestion is the tardiness of State Society action. This weakness could be greatly alleviated if the delegate would submit these AMA action-recommendations to the President immediately after the AMA annual meeting in June and the Clinical meeting in November. The president may then assign these items appropriately, and perhaps, if faster action were needed, he may elect to refer them to the Council for consideration and/or implementation.

The need to communicate organized medicine's message, especially to the younger physicians and ancillary brethren is great. The AMA delegate is singularly exposed to the historical role played by organized medicine and specifically to the purposes and responsibilities of the AMA. He will want, as I have, to give testimony to the need and greatness of the AMA (collectively, you and I), but where, when and how? Perhaps the proposed commission on communications should consider this dilemma.

I feel that the alternate delegate should attend both sessions of the AMA House. I strongly feel that our State Society ties with the States of the North Central Medical Conference should be maintained and built upon through more active participation in the fall conference and the AMA liaison meetings.

This House should face up to the implications of PL 89-749—the "Comprehensive Health Planning and Public Health Service Amendments of 1966"—one of the most all-encompassing pieces of legislation ever enacted by Congress. Every state is required by this law to develop a comprehensive plan for health facilities, services and manpower; supposedly it affords the means whereby states and localities may organize and develop their health resources. It is my understanding that this plan has been implemented on the state level with too, "two" little physician representation. County (District) medical societies are urged to take the lead in establishing local planning councils. And, so it goes—ad infinitum!

That our profession is engulfed in social evolution is all too apparent. Someone said, "We are now wed (shotgun) to the Federal Government, and, like any marriage it will be whatever we jointly make of it, providing we communicate, and providing we understand each other. There are new ground rules.

1) Medicine is now subject to public policy.

2) Public policy now states that health is a right.

3) Public policy knows that an unfettered profession can provide the best quality care, and, at this point at any rate, tends to protect the profession's integrity.

4) Public policy, therefore, looks to the profession for leadership and guidance in the areas of its expertise and we must supply it.

5) This now creates a new role for the profession. We are now responsible for the public health in addition to the health of our individual patients.

6) This new responsibility demands our solution or at least our creative thinking, on problems of cost, manpower, rational planning and methods of delivering the highest quality medical care."

The AMA (you and I) recognizes these challenges and resolves (with your help) responsible solutions.

My sincere thanks to my colleagues for the opportunity of serving them in the AMA House of Delegates. A special thank you to our staff, Lyle, Vern, and the girls. My best wishes to Jim Moses as he assumes this honored role.

Respectfully submitted,
(Signed) Thomas E. Pederson, M.D.,
Delegate to the American
Medical Association

## HOUSE OF DELEGATES—SECOND SESSION

The Second Session of the House of Delegates was called to order by Speaker P. O. Dahl at 1:00 p.m., Sunday, May 5, 1968, at the Clarence Parker Hotel, Minot, N.D.

Dr. Ulmer, Chairman of the Committee on Credentials, reported that there was a quorum present. Dr. DeCesare will sit in as alternate for Dr. Amidon.

Secretary Buckingham called the roll and the following doctors responded:

Drs. J. R. Goff, Fargo; M. H. Poindexter, Fargo; A. C. Burt, Fargo; R. E. Kulland, West Fargo; P. J. Beithon, Wahpeton; Frank DeCesare, alternate, Fargo; R. J. Ulmer, Fargo; D. R. Halliday, alternate, Fargo; G. H. Hilts, Cando; R. D. McBane, Devils Lake; C. R. Miller, Bottineau; J. A. Sandmeyer, Grand Forks; G. L. Countryman, Grafton; R. H. Leigh, Grand Forks; W. T. Powers, Grand Forks; W. W. Nelson, alternate, Grand Forks; G. R. Richardson, Minot; L. A. Giltner, Minot; A. M. Cameron, Minot; B. Jayapathy, Minot; C. J. Klein, alternate, Valley City; O. V. Lindelow, Bismarck; J. J. Moses, Bismarck; M. A. K. Lommen, Bismarck; R. J. Dunnigan, Bismarck; M. J. E. Johnson, Bismarck; W. C. Riecke, Bismarck; E. O. Hieb, Jamestown; J. V. Miles, Jamestown; D. E. Skjei, Williston; R. F. Raasch, Dickinson; R. E. Hankins, Mott; James Little, Mayville.

There were 33 delegates and alternates present. Others attending were: Drs. V. J. Fischer, C. H. Peters, T. H. Harwood, Tom Pederson, Wm. Buckingham, C. M. Lund, Roy C. Little, R. E. Mahowald, Dean Strinden, R. W. McLean, R. B. Tudor, R. S. Larson, W. R. Fox, J. M. Van der Linde, W. C. Hanewald, J. H. Mahoney, and Mr. Coyner, AMA Representative; Mr. Lyle Limond and Mr. Vern Wagner.

Speaker Dahl entertained a motion from the floor to accept the minutes of the First Session as printed in *The Journal-Lancet*. The motion was seconded and carried.

At this time the chair recognized the representative of the Board of Medical Examiners, Doctor C. M. Lund from Williston.

### Report: Activities of the North Dakota State Board of Medical Examiners

During the year of 1967, sixteen men applied for licensure by examination. This is broken down as follows:

Three were U.S. Citizens and were awarded permanent licenses.

Nine were non-citizens and were issued temporary licenses, which can be replaced by permanent licenses when U.S. citizenship is obtained.

Four failed. (1 of these for the second time.)

These sixteen applicants came from: 4 from United States; 1 each from Greece, China, Korea and South America; 4 from Philippines, and 2 each from the British Isles and Canada.

Twenty-two applied for and were licensed by reciprocity and/or endorsement. The licensure was based on: 8 National Board Certificates; 3 Minnesota Licenses; 2 each from Iowa, Michigan and Missouri; and one each from Indiana, West Virginia, California, Maryland and Texas.

Residence and practice in North Dakota of 34 given temporary or permanent licenses: 2 are in residencies; 1 is with the Public Health Service; 4 are with the Air Force in North Dakota; 1 is with the Army in North Dakota; 1 is with the Army out-of-state; 4 never located in North Dakota; 3 practiced a few months then left the state; and 18 are still in practice in North Dakota.

The National and Federated Board trends are for uniform state board examinations; the elimination of the basic science examinations; more objective, rather than essay type of questions, and less technical and more practical type of examinations.

Speaker Dahl: Thank you, Dr. Lund. The Chair at this time would extend the privilege of the floor to our president-elect, Dr. C. H. Peters, for the purpose of presenting two awards; one to a past president, and the other to our present president who soon will be a past president. I will appoint Dr. Skjei to escort Dr. Lund to the platform.

Dr. Peters: On behalf of the Council, and the House of Delegates of the North Dakota State Medical Association, I wish to present to you for your services as state president in 1960 and 1961, this distinguished service award, a plaque. I think you deserve this very much. We know you did an excellent job.

Dr. Lund: Thank you.

Speaker Dahl: I will appoint Dr. Richardson to escort Dr. Fischer, our present president, to the platform.

Dr. Peters: Again, congratulations. It is my privilege and pleasure to present to you this plaque from the Council and the House of Delegates for your distinguished service as President in 1967 and 1968.

Dr. Fischer: Thank you, first of all for this honor, and for your cooperation this past year as far as the association is concerned.

I think our attendance at this meeting has been excellent. The scientific sessions have been attended better than at any time in the past. I think the new format has helped in this regard.

I would like also to propose one thing that I think would expedite our meetings. That is, that the reference committee reports be given to the delegates so that they can be presented to them before given on the floor, as it is hard to think them through.

I want to thank Lyle Limond, our executive secretary, and his capable staff. I would never have gotten through the year without them.

Speaker Dahl: Congratulations to Dr. Lund and to Dr. Fischer from the entire association for a job well done.

The highlight perhaps of the meeting of the House of Delegates each year is the unique opportunity of this body to recognize physicians who have practiced in our state for many years. This body has the privilege of giving honor and a small symbolic token to a doctor who has practiced for 50 years in our state.

Dr. Roy C. Little of Mayville, N.D., was born April 20, 1892, in Madison, Minn. He attended grade and high school at Madison; then attended the University of Minnesota Medical School and interned at the Long Island College Hospital at Brooklyn, N.Y. He received his M.D. degree from the University of Minnesota in 1919. He then moved to Mayville in 1919 where he began his practice of medicine, and after 36 years his son, James, joined him, and he is still practicing in Mayville.

I would extend the privilege of the floor to our president-elect, Dr. C. H. Peters, and ask Dr. James Little to escort his father, Dr. Roy C. Little, to the front of the room.

Dr. Peters: Congratulations Dr. Little. This is a unique privilege I have, to present you with the 50 Year Pin and a Certificate of Distinguished Service from the House of Delegates. Not many of us will be able to say we have served 50 years to the public and to the association.

I also would like to read a telegram for you. "Congratulations to Dr. Roy C. Little on his fiftieth anniversary" from the nursing staff of the Union Hospital, Mayville, N.D.

Dr. Little: Thank you.

Speaker Dahl: The House of Delegates at this time will extend the privileges of the floor to Dr. James C. Little, for a presentation to his father, Dr. Roy C. Little. This may be the one and only time that a father would receive an award from his son, before the House.

Dr. James C. Little: As a delegate from the Traill-Steele Medical Society, I would like to present this plaque to you, Dr. Roy Little, from the Traill-Steele Society, for 50 years of faithful service.

As a partner of yours, as well as your son, I feel I may say that you may not have completed too much paper work, but I know you have given long and faithful service to the society, association, and to your patients.

Speaker Dahl: Dr. Little's family are present in the room. I would like Dr. James Little to present them.

Dr. James Little: I would like to introduce to you my mother, Mrs. R. C. Little; my sister, Mrs. Douglas Williams, and my wife, Jean.

Speaker Dahl: Our congratulations and best wishes to Dr. Little.

The chair would again extend the privilege of our floor to Dr. Peters to present an award in the form of a little cash instead of a symbol, to Dean Harwood of our Medical School. Dr. Powers, would you please escort Dr. Harwood to the rostrum.

Dr. Peters: It seems that you have been receiving a lot of money at the sessions of the House of Delegates. It must be drawing a bit of interest.

I am privileged to present to you these checks for the University of North Dakota Medical School in the total amount of $4,248.50. This is from the American Medical Association and its Research Foundation, the AMA-ERF allocation to the State. This represents contributions that came in 1967 from throughout the United States. Of this amount, $3,270.00 was from designated contributions and $978.30 from undesignated contributions.

Dean Harwood: Thank you very much. This does not stack up to accummulate any interest. We put this in an active fund. There are certain regulations about travel, so that only one member of a department can go to one meeting a year. We like to send more of them and that is what we use this money for. Part of this check comes from the good women in the Woman's Auxiliary because many of them have projects and contribute to the AMA-ERF Fund. I certainly appreciate this and I am extremely grateful.

Speaker Dahl: At this time I wish to extend the privileges of the floor to Dr. Harwood for the purpose of a special presentation.

Dean Harwood: I would like to read to you a letter written to Ralph E. Leigh, M.D. from me.

April 25, 1968

Ralph E. Leigh, M.D.
111 North 5th
Grand Forks, N.D.

Dear Ralph:

As you know, all members of the teaching staff of the University of North Dakota, including the Medical School, must retire at the age of 70. I believe you will reach that high-water mark this year. I would like to thank you for your many years of dedicated service and contributions to our teaching program. In the numerous surveys of our students after they leave here, in which we solicited comments about teaching, we have had universally good reports about obstetrics. You have reason to take real satisfaction in a good job well done.

Further, I have, from time to time, been aware of the many things you have done to further the good cause of medicine in North Dakota. Your contributions to the cause of education through the chairmanship of the Medical Education Committee for many years was a real contribution. Your efforts in regard to the establishment of the very important Medical Center and its mill levy support were important. Your contribution to the medical progress in Grand Forks through your influence in establishing St. Micheal's Hospital at its present site has laid the groundwork for what I hope will be a real medical center in the modern sense in years to come.

I am well aware of the fact that at the time Dr. Potter came and the Physiology Department was seriously short in teaching personnel and could not, through the Nepotism Act, hire his son, you agreed to pay him the salary for part-time work in your office. I understand that in that instance you virtually supported a staff member for the entire year with very little benefit to yourself.

In another instance, I am aware of the fact that Dr. Cornatzer's presence on our staff was strongly influenced by you, and if any one person is responsible for his being here, you are the one. His contribution to the school, to the University, and to the entire community is inestimable.

In addition to the above, I am well aware of the help you have given many medical students in the way of financial support to enable them to get their education. Most of these I have heard about through the students themselves and not you. I am reminded that in the Oath of Hippocrates are to be found the words,

> "To reckon him who taught me the art equally dear to me as my parents—to share my substance with him—and relieve his necessities if required—to look upon his offspring in the same footing as my own brothers and to teach them this art without fee or stipulation and that by precept, lecture, and every other mode of instruction I will impart a knowledge of the art to my own sons and those of my teachers—and to disciples bound by a stipulation and oath according to the law of medicine."

You have obviously gone beyond the call of duty because literally you have done this for your own three sons and gone on from there to help others.

The list goes on. Your offering of the prizes in Physiology, designed not for the student who gets the highest written grade but for the student who has dug in and done his best and stuck with it, has always appealed to me as the type of prize of which we should have more.

Above are the things which I have observed my own self and for which I would like to express the official thanks for the Medical School in addition to my own personal thanks. I intended to have a formal type of recognition of your services given at the time of the State Medical Society Meeting in Minot in May. There is to be an alumni luncheon which would make a nice occasion to present you with a statement and official thanks. I understand you will be out of town then. Another occasion is the annual class luncheon which is held at graduation time. That is the noon when we hand out the prizes, and I would be most happy to have you attend this as guest of honor. Again I understand you will be out of town. If you should by any chance, plan to be present at either or both of these occasions, I would be most happy to make public recognition of what I have tried to express personally in this letter.

With sincere appreciation,
T. H. Harwood, M.D.
*Dean*

I would be very pleased to have this letter included in the proceedings of the House of Delegates, to be published in *The Journal-Lancet.*

Dr. Miles: I move that this letter from Dean Harwood to Dr. Leigh be included in the Proceedings of this House of Delegates and to be printed in *The Journal-Lancet.*

Dr. Evans: I second this motion.

Speaker Dahl: All in favor? All Ayes. Motion passed and this letter will be a part of these proceedings.

## Reference Committee to Consider the Reports of the President, Secretary, Executive Secretary and Treasurer

Dr. Hankins, chairman of this committee, presented the following reports and their discussions, which were adopted section by section, and as a whole.

1] Report of the President. This report was reviewed and approved. The reference committee noted with approval the activities of our state president for the past year, and wishes to commend Dr. Fischer for a very successful year in services to our association.

2] Report of the Secretary. This report was reviewed and approved. Your reference committee wishes to express appreciation for the service of the secretary to the association in many ways over and above his assigned duties as secretary.

3] Report of the Executive Secretary. This report was reviewed and approved. The committee feels that a special commendation is in order for our new assistant, Mr. Vern Wagner, for the fine work he is doing and for the enthusiasm shown on behalf of this association.

In line with Mr. Limond's "Thoughts for the Future," the reference committee feels that the challenge has been made to the association as a whole, and to individual physicians to clarify their plan of action for the future, and to encourage more participation in the activities of the association by all doctors in the State.

4] Report of the Treasurer. This report was reviewed and approved. The committee noted the sound financial status of the association under the very able direction of our treasurer, Dr. R. D. Nierling.

5] Report of the Liaison Committee to the State Bar Association. This report was reviewed and approved. After deliberation in depth, with considerable testimony pro and con, regarding the proposed addition to the North Dakota Rules of Civil Procedure, to wit: The Malpractice Panel; the committee recommends to the House that definitive action be postponed at this time. However, the committee believes further study is necessary and recommends that the Speaker of the House be directed to place this proposal on the agenda for reconsideration at the next annual meeting. The reference committee further recommends that the Liaison Committee to the State Bar Association obtain more information regarding the operation of the plan in other states and submit this information to the district medical societies for continued evaluation throughout the year, so that they may instruct their delegates before the next annual meeting.

Dr. Robert E. Hankins, *Chairman*
Dr. Roy E. Kulland, *Vice-Chairman*
Dr. C. Robert Miller
Dr. D. Ross Halliday, *Alternate*
Dr. William Riecke

Dr. Hankins: I move the adoption of the report as a whole. I wish to thank the members of my committee and the doctors who testified before our committee. I think most members of the association had a chance to hear the proposal regarding the Malpractice Panel. There were several who appeared in opposition to this plan. Perhaps some of the doctors in opposition would like to speak at this time.

Dr. Miller: I second the motion to adopt the report as a whole.

Speaker Dahl: Is there any further discussion? All in favor of the adoption of the report as a whole? All Ayes. Motion passed. I would also like to thank the members of this committee for the way this controversial subject was handled. I think your committee can be very proud of the work and thought expended on this report.

## Reference Committee to Consider Reports of Council, Councillors and the Representative to the Blue Shield Board of Directors

Dr. Countryman, chairman of this committee, presented the following reports and their discussions, which were adopted section by section, and as a whole, as amended.

1] The report of the chairman of the Council was read and the following noted:

The total membership of the state medical association was 509, with an estimated income of $46,385.00. The report of the treasurer showed a decrease in income to $42,415.00. There is an increasing number of members who are lagging in payment of dues. This committee feels such a condition is deplorable.

This committee is interested in hearing a report by the legal representative as to any action taken on the reduction of workmen's compensation fees for physicians' employees.

This committee is not in favor of the recommendation that each district society send one man to the AMA House of Delegates meeting who would report back to his district society, because of financial difficulties, and it should be a district's prerogative, rather than a directive.

This committee wishes to know if there is a possibility of the Medical Association being reimbursed by the government for a sum of money advanced to organize the North Dakota Regional Program.

It is noted that closer liaison between the Committee on Medical Economics and Blue Shield has been accomplished.

This committee has read Dr. Paul Johnson's presentation on medical malpractice plan to the Council. We favor any plan which would reduce nuisance suits and help resolve legitimate claims.

Mr. Limond's report to the Council on medical dues is noted and we recognize that dues have to be commensurate with the society's financial requirement.

Speaker Dahl: The chair has a question. Do you wish the report from the legal counsel now, or in the future?

Dr. Countryman: I think this could be reported in the future as there is no particular action asked of the House of Delegates at this time. However, perhaps something could be instituted to give us a report at a later date.

Dr. Mahowald: Just a few words to clarify this. This House directed that the Council take some action on the above. This came up at the Interim Meeting of the Council but we did not have the legal counsel at the meeting. As a result, it was put off until this spring meeting. This will be a directive of the Council which will be made at the Interim Meeting, and this report will be in your Handbook.

2] The report of the Councillor from the First District was read and accepted. The recommendation that driver training education be expanded and if necessary, subsidized to include two wheel vehicles is noted and commended.

Public appearances of physicians on radio, television, and before service clubs when requested to speak on medical subjects in the general public welfare should be encouraged.

The Poison Control Center in Fargo was transferred to the North Dakota State University Toxicology Department. It was stated that 24-hour coverage could be arranged. If the First District's use rate of only 2 to 3 calls per year is consistent with that of other areas, this committee feels that the state would be better served by a single poison control center maintained on the basis of 24-hour service.

Dr. Richardson: Is the State University providing this poison control center on a 24-hour basis and giving service?

Dr. Ulmer: We were told that this would be done.

Speaker Dahl: There is no motion directing any specific action in this report.

3] The report of the Councillor of the Second District was reviewed. The reference committee takes note and approves of the following points made in this report:

A] Medical representation on the Board of Directors of Blue Shield Corporation be unchanged, allowing a minimum of two doctors of medicine from each district medical society. This is self-evident from this morning's meeting.

B] The physician's affidavit in the matter of marriage license application is archaic and does not conform precisely to the North Dakota Century Code, and since the legal fee of $2.00 is inadequate, therefore, the matter of changing the law and the legal form should be referred to the legislative committee for appropriate action.

C] A resolution on weight classes in wrestling, while we concur with this, has been referred to the Committee on New Business.

Dr. Leigh: In going over the marriage certificate, it was obvious that the whole thing should be revised. It is a matter for the state legislature and your legislative committee should handle this. The $2.00 fee is inadequate and it should be increased.

Speaker Dahl: There is a recommendation this portion of the report be adopted. Dr. Countryman's committee has requested that the executive office forward instructions to the legislative committee to introduce legislation at the ensuing session, specifically on this marriage license. All those in favor? All Ayes. Motion passed.

4] The report of the Councillor for the Third District was reviewed. The district should be commended for its gift of $1,000.00 to be used for the purchase of materials on sex education to be used in the school system. The Grand Forks school board on the recommendation of the Community Research Committee has included sex instruction in the public school system.

5] The report of the Councillor from the Fourth District was reviewed. We will be interested in the action of the Blue Shield corporate body's action relative to the admission of lay members to the board, inasmuch as this subject has been covered by several of the societies and will be acted upon at the 1968 annual Blue Shield meeting. This, of course, was decided this morning.

In reviewing the new birth certificate supplied by the State Department of Health of North Dakota, we object primarily to that portion which deals with confidential information for medical and health use which must be filled out. Specific examples: (1) The education of the father and mother, such as completed years of elementary school, high school and college, (2) previous deliveries, dates of such, live or stillborn, (3) onset of prenatal medical care, number of prenatal visits, including date of last normal menses. (4) Legitimacy, or no.

It is our opinion that this confidential datum is not pertinent as vital statistics for the State Health Department. It would be acceptable if the above word *must* be changed to *may* "be filled out".

The committee recommends to the Department of Vital Statistics of the State Health Department that the word "must" be changed to "may" in the new birth certificates.

Dr. DeCesare: This is a cut and dried affair by the United States Public Health Service, passed down to the North Dakota Department of Health. Perhaps we can do nothing about it. I cannot for the life of me see what this has to do with the vital statistics that are kept in Bismarck on the birth of a child. These questions must be asked and must be answered. The mother must give answers as to her education, and whether or not this particular child is legitimate. I think our Obstetrics Society has very strongly opposed this form of birth certificate. If that word "must" was changed to "may", I am sure it would be filled out and this would answer our problem. Is there anything we can do about this?

Dr. Giltner: I asked Dr. Peterson about that. It is a federal regulation and the state would not have anything to do with printing these up this way.

Dr. Richardson: This has been approached in other states by the legislature under the heading of "general discrimination". The physician is responsible for filing this. You are not really responsible for filling this out, but there is a fine for not filling this out. I think it should be referred to the Legislative Committee to see what can be done about this.

Dr. Leigh: When we went over this in committee, Dr. DeCesare voiced some concern about this. It is not the baby that is illegitimate, but the mother.

Dr. Marlin Johnson: This is a directive by the federal government. I think there is a question whether this can be changed.

Speaker Dahl: Dr. Countryman, if this body adopts this report, the executive office will be directed to check with the Bureau of Vital Statistics, and is it the directive from the committee that this go to the Legislative Committee for action?

Dr. Countryman: Whichever way that is feasible to get the best results to change this, if possible.

Speaker Dahl: Are there any amendments to be offered at this time?

Dr. Richardson: I move that this matter be referred to the Legislative Committee for study and action.

Dr. Giltner: I second the motion.

Speaker Dahl: This is an amendment to the motion made by Dr. Countryman.

Dr. DeCesare: I am offering this as a motion, that we are opposed to the present form of the birth certificate, and that it be referred to the Legislative Committee for review and study.

Speaker Dahl: We have a motion on the floor from Dr. Richardson.

Dr. Richardson: I will withdraw my motion in favor of Dr. DeCesare's.

Dr. Giltner: I withdraw my second to Dr. Richardson's motion.

Dr. DeCesare: I move that the North Dakota State Medical Association go on record as opposing the present form of birth certificate supplied by the State Department of Health of North Dakota, and that this matter be referred to the Legislative Committee for study and possible revision.

Dr. Leigh: I second this motion.

Dr. Powers: I rise to a point of order. The reference committee is just commenting on the Fourth Councillor District Report. Are we in order by bringing up new business here, without bringing this in as new business?

Speaker Dahl: I would agree with you in thought. The chair is going to rule that the reference committee may bring forth a resolution, other than the resolution committee, for action.

Dr. Cameron: Can this be changed on a state level, if it is referred to the Chairman of the Legislative Committee?

Dr. Buckingham: Our approach to this problem would be to send letters to our Congressmen in the United States Congress. The other would be to present a bill to the state legislature to do what they can to change this. This is the way this will be handled.

Speaker Dahl: The question is called for. All those in favor of the amendment made by Dr. DeCesare. All Ayes. Amendment is adopted. We will now vote on the motion to adopt this portion of the report as amended. All those in favor? All Ayes? Motion passed.

6] The report of the Councillor of the Fifth District was reviewed and accepted as written. The district is to be commended for their efforts and interest in the protection of high school athletes.

7] The report of the Councillor of the Sixth District was reviewed and approved. The committee regrets the resignation of Dr. E. G. Vinje from the Blue Shield board and the House of Delegates. We hope that he will continue his active and productive interest in medical affairs. His contributions to the House and the Blue Shield board will be missed.

The reference committee concurs with the Sixth District resolution in opposition to mandatory mass immunizations.

8] The report of the Councillor of the Seventh District was reviewed and approved and note is taken of the recurring concern with physician publicity in relation to public clinics. It is the feeling of the reference committee that a distinction must be made in acceptable publicity and promotional practices, between those activities from which the public's welfare is of paramount interest and those activities through which the physician's interest and personal advantage is obvious.

The problem of optometrists being in violation of the Medical Practice Act through illegal use of mydriatics and the removal of foreign bodies from the eye is noted with concern, and we agree that appropriate action must be taken when proof of such violations come to our attention.

9] The report of the Councillor of the Eighth District was reviewed and accepted as printed.

10] The report of the Councillor of the Ninth District was reviewed and accepted as printed.

11] The report of the Councillor of the Tenth District was reviewed and approved. This committee takes notice of a suggested revision in the criteria for admission to public schools. It was our feeling that suitable means are already available to handle this problem, and that with the information available to us, we did not feel it was appropriate for the House to enter into this matter at this time.

Dr. Leigh: In reading over the report on page 72 in the Handbook, the committee felt that this is quite unclear. I do not think we have enough information to know what the problem is, and that is why we passed it off.

Dr. McLean: I am sorry there is not enough information. There are children who through the recommendations of the family physician, or who have been tested by the State Teacher College, show they are capable and ready to start school even though they have not reached the proper age, and then there are children who are the right age but who are not quite as advanced and are not ready to start school on September 1st. The school district can do nothing about this. However, there are going to be some changes proposed at the next legislature regarding this. We are only asking for the approval of the State Medical Association that they would be in favor of this. This does not mean that anything would have to be done by the physicians of the state, only their approval.

Dr. Leigh: I move that we accept a substitute motion that the House of Delegates stand in favor of any legislation directed to the improvement of the problems in school.

Dr. McBane: I second the motion.

Dr. DeCesare: I am not completely clear on this. How do the educators feel about this? If they feel it is not important, why should the doctors feel this should be changed?

Dr. McLean: Actually on the state basis at the present time, the educators are in favor of this and have tried to do something about it. I said I would see if we had the backing of the physicians. The law is written at the present time and there is nothing we can do about it. This is only permissive legislation.

Speaker Dahl: All those in favor of the substitute motion offered by Dr. Leigh. All Ayes. The substitute motion prevails. This adopts this portion of the report.

12] In reviewing the report of the vice-speaker of the House, Dr. Countryman, seated on the board of directors of Blue Shield, in lieu of the report of the Speaker of the House, Dr. Dahl, who was not able to attend many of the Blue Shield meetings, we wish to commend Dr. Countryman for his concise and knowledgeable resume of Blue Shield activities, during the past year. His contributions to the Blue Shield were most helpful and worthy—particularly since he has served as a past president of Blue Shield of North Dakota. This portion of the report was adopted.

The motion was made by Dr. Countryman, seconded by Dr. Leigh, that this report as a whole, as amended, be adopted.

Dr. G. L. Countryman, *Chairman*
Dr. R. D. McBane, *Vice-Chairman*
Dr. R. H. Leigh
Dr. F. A. DeCesare, *Alternate*

## Reference Committee to Consider Reports of the Medical Center Advisory Council, Committee on Medical Education, Committee on Nursing Education, Committee on Maternal and Child Welfare, Committee on Foreign Trained Physicians, Committee on Diabetes, Committee on Mental Health, Committee on Aging and Rehabilitation, Committee on Emergency Medical Service and the Medical Advisory Committee to the State Highway Department

Dr. J. V. Miles, chairman of this committee, presented the following reports and their discussions, which were adopted section by section, and as a whole.

1] This committee reviewed the report of the Committee on Nursing Education submitted by Dr. R. S. Larson, and approved the report.

2] The report of the Committee on Mental Health submitted by Dr. Paul Beithon was reviewed and approved.

3] The informational report by the Committee on Foreign Trained Physicians submitted by Dr. Glaspel was reviewed and accepted.

4] The report of the Committee on Diabetes submitted by Dr. Haunz was reviewed and accepted.

5] The report of the Committee on Aging and Rehabilitation submitted by Dr. Evans was reviewed and accepted.

6] The report of the Committee on Medical Education submitted by Dr. Ulmer was reviewed and accepted.

7] The report of the Committee on Emergency Medical Service submitted by Dr. Engstrom was reviewed and accepted. We recommend that continued study of this problem be carried out by the medical societies for effective emergency service we would be called upon to provide.

8] The report of the Committee on Maternal and Child Welfare submitted by Dr. Lucy was reviewed and accepted. We approve of this committee's plan to find statistically the female deaths (between the ages of 15-50) that were associated with pregnancy, and their plan to analyze the maternal deaths over a ten year period.

9] The report of the Medical Advisory Committee to the State Highway Department submitted by Dr. McLean was reviewed. We agree with the suggestion of the First District Medical Society that the problem of automobile liability insurance for epileptics be referred to the legislative committee. We also agree that the principle of complete immunity from liability for physicians reporting unfit drivers is sound. This problem should also be referred to the legislative committee for study and further action. Consideration of this problem by the legislative committee should include the letter by the legal counsel, Mr. Wheeler, regarding this problem.

10] The report of the Representative to the Medical Center Advisory Council submitted by Dr. Woutat, was reviewed and with the exception of the section on the Medical Center Loans, this report was approved. In light of present information this reference committee recommends no change in the status of the Medical Center Loan Fund. The number of doctors returning to the state to practice in the 10 years since the loan fund was started is double compared to the 10 year period prior to the origin of the loan fund. The loan fund does not constitute a significant drain on the funds available for medical school expenses.

11] This reference committee was charged with the responsibility of considering the need for a basic science law in this state. In light of current trends of medical licensure this committee recommends that there is no need for a basic science law in this state.

12] Reference Committee No. 3 has reviewed the 1967 House of Delegates action regarding liberalized abortion law, and has reviewed the recent statement on therapeutic abortion as issued by the American College of Obstetricians and Gynecologists. The resolution of the committee concerning therapeutic abortion is essentially the same as the statement on therapeutic abortion of the American College of Obstetricians-Gynecologists and the statement on therapeutic abortion of the American Medical Association. This committee reaffirms its stand of one year ago and recommends to the House of Delegates that the statement on therapeutic abortion by the American College of Obstetricians-Gynecologists be submitted to the legislative committee for drafting of a suitable bill to be introduced to the legislature.

We were directed to review this by the Speaker of the House because the vote last year was somewhat less than unanimous. Before we go into a discussion I would like to review the conclusions of the American Medical Association regarding this problem, who have gone into this much deeper than we have. (Dr. Miles reviewed the AMA Report.)

Speaker Dahl: It is my understanding that this committee is again directing the legislative committee to again introduce legislation pertaining to the abortion bill. There will be a bill before the state legislature in January. Is there any discussion?

Dr. Buckingham: This is not any easy bill to introduce. We attempted to do so at the last legislature. We finally got it in the form of a resolution which was lost in the last go-around. It was very difficult to find anyone who would put their name on this bill to present before the legislature.

Dr. J. V. Miles, Jr., *Chairman*
Dr. R. J. Ulmer, *Vice-Chairman*
Dr. W. W. Nelson, *Alternate*
Dr. A. M. Cameron
Dr. M. J. E. Johnson

Speaker Dahl: I would compliment Dr. Miles and his committee for their expert handling of a controversial subject, and their very complete report.

Dr. Miles moved, seconded by Dr. Johnson, that this report be adopted as a whole. The motion carried.

Dr. Buckingham read a telegram received from Representative Tom Kleppe to the State Medical Association: to wit: "Please accept my best wishes for a successful convention."

At the end of 10 minutes for a coffee break, Speaker Dahl called the meeting to order and asked for the report of Reference Committee No. 4.

## Reference Committee to Consider the Report of the Delegate to the A.M.A., the Committee on Necrology and Medical History, the Committee on Legislation, Committee on Public Health, Committee on Public Relations, Committee on Pharmacy, Liaison Committee to the North Dakota Dental Association, Committee on Medicine and Religion and the Committee on A.M.A.-E.R.F.

Dr. J. M. Little, chairman of this committee, presented the following reports and their discussions, which were adopted section by section and as a whole.

1] Your reference committee reviewed and approved the report of the Committee on Necrology and Medical History, and again we wish to commend Dr. Boerth and his committee for the superior job they have done to organize and assemble the details and accomplishments of our deceased fellow physicians.

The members of the House of Delegates are asked to stand for a moment of silence in respect for the passing of the following doctors:

J. W. Moreland — Otto C. Maercklein
Louis Henry Landry — Samuel B. Shea
D. Frederick Griebenow — Gudmund G. Thorgrimsen
John A. D. Engesather

A moment of silence adopted this report.

2] The report of the Committee on Public Health was reviewed and notice was taken that there had been no meeting of this committee in 1967.

3] The report of the Committee on Public Relations was reviewed and notice was taken that there had been no meeting of this committee in 1967.

4] The report of the Committee on Pharmacy was reviewed and again notice was taken that there had been no meeting of this committee in 1967.

5] The report of the Committee on Medicine and Religion was reviewed and it was noted that there had been no meeting of this committee in 1967.

6] The report of the Liaison Committee to the North Dakota Dental Association, was reviewed and it was noted that there had been no meeting of this committee in 1967. Your reference committee strongly encourages this committee to meet with the Dental Association because of our common medical and economic problems. This portion of the report was adopted.

7] The report of the Committee on A.M.A.-E.R.F. was reviewed and it was noted that there had been no meeting of this committee in 1967.

8] Your reference committee reviewed and approved the report of the Committee on Legislation. We noted in the committee report that even though 1967 was an off year legislative-wise, this committee was working and thinking about possibilities for new legislation. We heartily agree with the Committee on Legislation that we should oppose anything that smells of socialized medicine. We would like to call the attention of the medical profession at large that umbrella liability insurance coverage is now available because of the fact that medical liability suits have increased not only in amount but in number. The amounts of suits may be considerably above the amount of insurance coverage that the average physician carries.

The reference committee approves in general the statement that physicians have to be a bit careful regarding raising of fees in the coming year.

Your reference committee strongly recommends that each medical specialty group, and district society in the state pick one or two men who can be called upon by the Legislative Committee to testify on any given bill affecting their particular field of medicine, and their area of the State. We also recommend that each district medical society set aside one of their meetings as a legislative meeting and invite their legislators to this meeting to help explain any possible or pending legislation.

We urge that the office of the executive secretary continue to maintain a card file on all legislators with the name of his or her personal physician so these physicians can be called by the legislative committee to help explain to the legislators the medical society's feelings on any particular bill.

The names of the individuals appointed by the specialty groups in each district society should be forwarded to the office of the executive secretary for his records. This portion of the report was adopted.

9] Your reference committee reviewed and approved the report of Dr. Tom E. Pederson, our delegate to the A.M.A. We agree with Dr. Pederson's suggestion that the A.M.A. delegate furnish the speaker of the House of Delegates a list of A.M.A. recommendations so that these recommendations could be referred to the proper reference commission for their deliberations, and in turn, they could then present these to the House of Delegates for official action if needed. We also agreed with Dr. Pederson that these suggestions should be submitted immediately after the A.M.A. meeting; and if faster action is needed, the state president could refer them to the Council for consideration and/or implementation.

There are several A.M.A. recommendations to the State Association and since these recommendations have not been referred to the proper committees, your reference committee reviewed these recommendations and wish to submit the following resolutions:

### RESOLUTION No. 1

WHEREAS, on Nov. 3, 1966, the Congress of the United States enacted Public Law 89-749, known as the Comprehensive Health Planning and Public Health Service Amendments of 1966; and

WHEREAS, Congress has declared through this law that federal financial assistance will be directed to support the marshaling of all health resources, national, state, and local to assure comprehensive health services of high quality for every person; and

WHEREAS, Congress has also declared in this law that its desirable administration requires strengthening of the leadership and capabilities of state health agencies, as well as a broadened support of health services in communities; and

WHEREAS, PL 89-749 provides that in its administration in each state there must be an advisory council, a majority of the membership of which must be consumers of health services, to advise the state agency given responsibility for health planning; and

WHEREAS, PL 89-749 is health legislation of the greatest magnitude, and the health professions are best suited to assume responsibility for public health management;

NOW, THEREFORE, BE IT RESOLVED that this House of Delegates of the North Dakota State Medical Association, in order to assure that the intent of Congress as expressed in PL 89-749 is properly carried out, urges the Governor of North Dakota to avail himself to the fullest possible extent of the expertise of health professionals in the implementation of their Comprehensive Health Planning Program.

Dr. Little: I move that this resolution be adopted.

Dr. Jayapathy: I second the motion.

Speaker Dahl: All in favor? All Ayes. Motion passed and resolution is adopted.

### RESOLUTION No. 2

WHEREAS, the procurement, processing, distribution or use of whole blood, blood products and blood derivatives, as well as other human tissues, involve the rendering of medical services by all who participate therein; and

WHEREAS, the rendering of medical services is, in no sense, the equivalent of selling a commodity; and

WHEREAS, beyond assurances that all who participate in their rendering shall be responsible to exercise the highest standards of professional judgment and procedure, the results of medical services cannot be guaranteed;

NOW, THEREFORE, BE IT RESOLVED that the House of Delegates of the North Dakota State Medical Association endorse the concept that the procurement, processing, distribution or use of human blood and other human tissues is the rendering of medical services by all who participate therein; not the selling of a commodity; and

BE IT FURTHER RESOLVED that the House of Delegates of the North Dakota State Medical Association reaffirm the position that, beyond assurances that all such participants shall be responsible to exercise the highest standards of professional judgment and procedure, the results of medical services cannot be guaranteed; and

BE IT FURTHER RESOLVED that the House of Delegates of the North Dakota State Medical Association direct the Legislative Committee to take legislative action at the state level to implement this concept and position.

Dr. Little: I move the adoption of this resolution.

Dr. Lommen: I second the motion.

Dr. Richardson: This point is vital. This type of law has been passed in a large number of states in the past year. I hope that the House will direct the Legislative Committee to be very careful in drafting the bill to use the wording of the American Medical Association.

Speaker Dahl: All in favor? All Ayes. Motion passed.

### RESOLUTION No. 3

WHEREAS, the American Medical Association has previously endorsed the establishment of an independent, voluntary, non-profit and bipartisan organization to promote political education and political action known as the American Medical Political Action Committee, AMPAC; and

WHEREAS, in all fifty states and the District of Columbia, independent, non-profit, non-partisan, voluntary and unincorporated political action committees have been formed; and

WHEREAS, membership in AMPAC and state political action committees is open to physicians, their wives and friends; and

WHEREAS, physician activity in 1966 culminated in an all time high of individual political participation across the country with encouraging results; and

WHEREAS, it is essential to continue preparation for 1968 by supporting state PAC-AMPAC membership programs and by participation in political education projects; and

WHEREAS, the American Medical Association recognizes that leadership at all levels of medicine must make individual commitment to state PAC-AMPAC membership and programs;

NOW THEREFORE BE IT RESOLVED that this House of Delegates reaffirm its support of AMPAC-COMPACT, and

BE IT FURTHER RESOLVED that the members of this House of Delegates urge the leaders and membership of their local organizations to continue their support of COMPACT and AMPAC and to demonstrate their support by a membership contribution and participation in local COMPACT programs.

Dr. Little: I move the adoption of this resolution.

Dr. Jayapathy: I second the motion.

Speaker Dahl: All in favor? All Ayes. Resolution adopted.

### RESOLUTION No. 4

WHEREAS, doctors, as citizens, should take an active interest in community affairs, and

WHEREAS, hospitals need active support and advice of the members of the medical community and only by having physicians active on governing boards can proper liaison between administration and staff be maintained, and

WHEREAS, Doctors of Medicine possess knowledge that can be valuable to hospital administration;

NOW, THEREFORE, BE IT RESOLVED that the House of Delegates recommend to each district medical society that it actively and aggressively promote membership by members of their respective societies on governing boards of the hospitals within their area.

I move the adoption of this resolution.

Dr. Lommen: I second the motion.

Speaker Dahl: All in favor? All Ayes. Resolution adopted.

### RESOLUTION No. 5

WHEREAS, Section 1801 of PL 89-97 states "Nothing in this title shall be construed to authorize any Federal office or employee to exercise any supervision or control over the practice of medicine, or the manner in which medical services are provided, or over the selection, tenure or compensation of any officer or employee of any institution, agency or person providing health services; or to exercise any supervision or control over the administration or operation of any such institution agency or person."; and

WHEREAS, the Rules and Regulations promulgated under PL 89-97 in many areas, have exercised supervision and control over the practice of medicine and its practitioners;

NOW, THEREFORE, BE IT RESOLVED that the North Dakota State Medical Association undertake an analysis to determine whether or not implementation of the law has violated provisions of Section 1801; and

BE IT FURTHER RESOLVED that the results of this investigation be reported to the House of Delegates at the next Iterim Session.

Dr. Little: I move the adoption of this Resolution.

Dr. Jayapathy: I second the motion.

Dr. Little: I would like to clarify this a little. This means that the federal government by law can not interfere with the control of the practice of medicine. The Social Security Administration has in fact dictated policy as to whom should be in a hospital, or running a hospital. The A.M.A. is attempting to find out actual facts that this law has been violated by the Social Security Administration so that they can go to the government and state "you said you would not do this, but you are."

Speaker Dahl: All in favor? All Ayes. Resolution adopted.

### RESOLUTION No. 6

WHEREAS, Health care is now the nation's third largest industry, after construction and agriculture, and expenditures for health care, public and private, have risen dramatically in recent years, and there is every indication that these expenditures will continue to rise at an accelerated rate, and

WHEREAS, in the light of these expansionist pressures, it is necessary that the profession be conscious of its role in the control of costs which accompany increasing expenditures and demands, particularly when the supply of the services demanded often cannot increase at the same pace, and

WHEREAS, the health and well-being of his patient has always been—and must continue to be—the first concern of the physician; today he can effectively serve his patient as never before, and

WHEREAS, to the patient, good health continues to be his most cherished desire, his increasing demand for medical services is a reflection of his rising insistence that "want" or "need" be followed by "fulfillment" with a minimum of delay; and

WHEREAS, the causes of the rapid increases in the prices of major components of health care are complex and largely beyond the control of the physician, and in such an environment, the physician, out of his concern for his patient, must accept the additional responsibility of helping his patient conserve his "health care dollars." Together, the physician and his patient must face suppliers of the other components of health care and seek to acquire the necessary services and supplies with a minimum expenditure of the patient's dollars,

NOW, THEREFORE, BE IT RESOLVED that physicians must continue their search for ways to increase their own productivity and efficiency so that professional fees can be stabilized and perhaps lowered at times in the face of rising costs; and

BE IT FURTHER RESOLVED that the members of the medical profession coutinue to concern themselves with the overall design of the nation's health care system and the basic problems which limit its effectiveness.

Dr. Little: I move the adoption of this resolution.

Dr. Jayapathy: I second the motion.

Speaker Dahl: All in favor? All Ayes. Resolution adopted.

RESOLUTION No. 7

WHEREAS, physicians and other personnel are required by law to sit as members of Hospital Utilization committees, and

WHEREAS, their recommendations of over-utilization or unnecessary utilization of hospital beds or facilities may result in an individual being denied the services of the hospital, or the hospital being denied payment by public funds of such over-utilized services; and

WHEREAS, because of such action the individual members of the committee might be held personally liable,

NOW, THEREFORE, BE IT RESOLVED that the House of Delegates of the North Dakota State Medical Association direct its Legislative Committee to take legislative action at the state level to protect the members of these hospital utilization committees from any personal liability because of their recommendations.

Dr. Little: I move the adoption of this resolution.

Dr. Lommen: I second the motion.

Speaker Dahl: All in favor? All Ayes. Motion passed. Resolution is adopted.

RESOLUTION No. 8

WHEREAS, the federal Department of Health, Education and Welfare has interpreted the "reasonable charges" in Public Law 89-97 as consistent with the definition of "usual, customary and reasonable fees" as defined in the Report of the Reference Committee on Insurance and Medical Service of the 114th Annual Convention of the AMA, June 1965, in New York City; and

WHEREAS, Public Law 89-97 does not represent all of the medical practice covered by third party contracts;

NOW, THEREFORE, BE IT RESOLVED that the North Dakota State Medical Association resist any effort by any governmental or other agency to establish fixed fees for physicians' services and procedures under the physicians' supervision; and

BE IT FURTHER RESOLVED that any Committee associated with the North Dakota State Medical Association involved in discussions or negotiations of contracts involving doctors' fees negotiate on the basis of the "usual, customary and reasonable fees."

Dr. Little: I move the adoption of this resolution.

Dr. Lommen: I second the motion.

Speaker Dahl: All in favor? All Ayes. Resolution adopted.

RESOLUTION No. 9

WHEREAS, the North Dakota State Medical Association is committed to the principle of high quality medical care for all people; and

WHEREAS, the North Dakota State Medical Association recognizes that some citizens do not receive optimum medical care for a variety of reasons some of which are: lack of finances, lack of education, and lack of readily available medical personnel; and

WHEREAS, the AMA has encouraged the implementation of Title XIX programs, modifying them to meet the medical needs of our people;

NOW, THEREFORE, BE IT RESOLVED that the North Dakota State Medical Association affirm its support of the Title XIX programs for financing health care; and

BE IT FURTHER RESOLVED that the North Dakota State Medical Association encourage local efforts to identify those persons who are not now receiving optimum medical care; and

BE IT FURTHER RESOLVED that the North Dakota State Medical Association rededicate its efforts to the preservation of high quality care and to the recommendation of methods of delivering optimum services to eligible recipients.

Dr. Little: I move the adoption of this resolution.

Dr. Jayapathy: I second the motion.

Speaker Dahl: All in favor? All Ayes. Resolution adopted.

RESOLUTION No. 10

WHEREAS, the federal government is, at the present time, promoting and stimulating the formation of group prepayment medical practices and the patients limited only to members of a group or organization, and

WHEREAS, we feel this practice does not guarantee the patient the free choice of physician;

NOW, THEREFORE, BE IT RESOLVED that the North Dakota State Medical Association go on record as being opposed to any such government promotion of this type, and

BE IT FURTHER RESOLVED that the North Dakota State Medical Association go on record as being opposed to any group prepayment medical practice which does not guarantee the patient a free choice of physician; and

BE IT FURTHER RESOLVED that a copy of this resolution be sent to all of our state representatives to Congress.

Dr. Little: I move the adoption of this resolution.

Dr. Lommen: I second the motion.

Dr. J. M. Little, *Chairman*
Dr. M. A. K. Lommen, *Vice-Chairman*
Dr. C. J. Klein, *Alternate*
Dr. B. Jayapathy

Dr. Little: I move the adoption of the report as a whole.

Dr. Jayapathy: I second the motion.

Speaker Dahl: All in favor? All Ayes. Motion passed.

Speaker Dahl: May we now hear from Reference Committee No. 5, Dr. Burt, Chairman.

## Reference Committee to Consider Reports of the Committee on Medical Economics, The Representative to the North Dakota State Advisory Council for Hospital and Related Construction, The Ad Hoc Committee on Regional Medical Program (Heart, Cancer and Stroke) and Community Health Planning, Representative, Crippled Childrens Services Division to the Public Welfare Board, Committee on Crippled Children, Committee on Cardiovascular Diseases and the Committee on Cancer

Dr. Burt: (1) It is a pleasure to report to the association that liaison between the Medical Economics Committee of the State Association and our third party carrier, Blue Shield, has been excellent and promises to improve in the future.

The Committee on Medical Economics has been very active during the year and an early fall meeting is anticipated. Because of the volume of work, it is impossible that the Committee on Medical Economics can settle all problems immediately, and it should be anticipated by the various societies that their grievance committees will be more active in the future.

We strongly recommend that the liaison between Blue Shield and the Public Welfare Board continues. Philosophically, it is also recommended to the association that when dealing with Medicare Title 18, that itemized bills be sent rather than accepting assignments.

The Committee on Medical Economics will continue to try to find a solution to the Crippled Children's fee problem, but the resolution of this problem is somewhat in the future, and will be covered later in this report when the Crippled Children's Committee is reviewed. I move the adoption of this portion of the report.

Dr. Skjei: I second the motion.

Speaker Dahl: All in favor? All Ayes. Motion passed.

Dr. Burt: (2) The Representative to the North Dakota State Advisory Council for Hospital and Related Construction had two meetings during the year. Available funds for hospital construction were assigned to the Hazen Memorial Hospital. I move the adoption of this portion of the report.

Dr. Hilts: I second the motion.

Speaker Dahl: All in favor? All Ayes. Motion passed.

Dr. Burt: (3) The Ad Hoc Committee on Regional Medical Program was very active during the year, and was established simply as an investigative unit as well as a unit to apply for organizational funds. These funds to the amount of $188,000.00 were obtained and this particular committee has finished the task assigned to it. The North Dakota Research Foundation was established as a corporation and Dr. Willard Wright is working with this on a full-time basis. The corporation is organized and the board of directors is the council; the chairman of the council is chairman of the board, and it is strongly recommended that this particular organization as such be maintained.

Further, it is also strongly recommended to this association that this committee be authorized to obtain operational funds in the future. The direction of this organization at the present time is not entirely clear-cut, but it was felt by this reference committee that it should be encouraged to investigate all avenues of health planning. I move the adoption of this portion of the report.

Dr. Richardson: I second this motion.

Speaker Dahl: Is there any other motion that your committee will bring up to ask for operational funds? Three years ago when Dr. Miles' committee came up with the recommendation that this House permit the council to request funds for a feasibility study, before they could go back and grant funds, it had to come back to this body for review and passage. This committee cannot go any further without the House of Delegates specifically giving permission to this committee to apply for an operational grant. The name of the corporation is the Regional Medical Program.

Dr. Ulmer: The State Council created a non-profit corporation which was a vehicle to apply for a grant. The Regional Medical Program was set up and this must have a broad-based medical group in North Dakota. We have 70 individuals represented on this advisory group. An executive committee was created to run this program. It is this committee that is to study proposals and then advise to go ahead to apply for an operational grant. All this committee can do is stated that "we think this program has merit" and then send this on to Washington so the operational grant may be given. The interpretation of the law then and now is still subject to controversy. Each local program has had to study local needs and go ahead. The current interpretation of the law in Washington is that regionalization is a continuing business. You are doing feasibility studies and this will go on forever. All you do today is to see that we are given your permission to apply for an operational grant.

Dr. Burt: Our committee felt we would present this to the House of Delegates for approval or disapproval. We feel that as a committee, we would strongly suggest that this be accepted by the House.

Speaker Dahl: We must have a motion on this.

Dr. Ulmer: I move that there be an amendment to the motion on the floor: namely, to insert in there that this executive committee of the Regional Medical Program be authorized to approve application for operational funds.

Dr. Dunnigan: I second this.

Dr. Ulmer: The executive committee is primarily made up of physicians who were in fact the Ad Hoc Committee. They are the executive group that is actually running the Regional Program.

Dr. Mahowald: The board of directors, if the council understands this correctly, consists of the Council of the State Medical Association, with the addition of the executive secretary, Lyle Limond, who must sign all requests for money, and he will do so at the direction of the Council.

Dr. Cameron: I want the Council to have the authority. I do not want the executive committee to have the authority. I do not believe any decision can be made on this in the future, and this committee could change in the future. The Council should be authorized by the House of Delegates to be the one and only group to authorize the application for operational funds.

Dr. Ulmer: The executive committee of the Regional Program, whose chairman is Dr. Christoferson, are all physicians, and by federal law that Advisory Group had to contain representatives by the consumers. You do not have the authority as a Medical Association to tell this agency to apply for funds. They are operating under the federal law. In setting this up, we put this restriction over what they are doing. I think you must have faith in these doctors who are at the head of this.

Dr. DeCesare: I would like to read a brief summary of the organization of this corporation. The North Dakota Medical Research Foundation was issued a charter by the state. The articles of incorporation were signed by Lyle Limond, G. W. Toomey, then President of the State Medical Association, and William J. Daner, the attorney, at the time, of the Association. The board of directors were named as the Council of the State Medical Association along with Mr. Limond and Dr. Toomey. The board of directors, as I see it, are the voting body. If you pass the motion of Dr. Ulmer, the executive committee would have the authority to apply for funds, and supersede the board of directors.

Dr. Mahowald: If you are going to change this to Dr. Ulmer's interpretation, you are going to have to change the charter.

Dr. Ulmer: The Regional Medical Program had to be one agency to apply for a grant. The North Dakota University is the recipient and disburser of funds. I do not believe that the Advisory Committee can be dictated to by a federal group.

Speaker Dahl: We will put this question to our legal counsel, Mr. Wheeler.

Mr. Wheeler: The executive group is the one to reach a conclusion, whether certain operational funds should be sought after. If those funds are given, the funds come back and the Council administers the funds to see where they go and that they are spent as intended. They run the corporation. The Committee on a broader base makes a study and comes to the conclusion that an operational fund should be applied for.

Dr. Cameron: There are 53 programs and each has an organization under which it functions. That, in this state, is the Research Foundation. There was an Advisory Group formed. There is an executive committee of the Advisory Group. If you pass the motion by Dr. Ulmer, as I understand it, you are firing the Council. I would want the Council as the board of directors of the North Dakota Medical Research Foundation, the only and final authority in this state to authorize application for operational grants.

Speaker Dahl: I would like a vote to call off the debate. All those in favor? All Ayes. The debate is called off. Dr. Ulmer's amendment has been seconded. I will call for a vote on this. If this is turned down, there will be no motion on the floor.

All in favor of Dr. Ulmer's amendment? Ayes, 2; Nayes, majority. Motion is lost. The floor is now open for another motion on this.

Dr. Burt: Dr. Wright appeared before our Committee. I had nothing to do with this personally. We were guided by what Dr. Wright said. He was quite specific in requesting permission for these two things: that this organization be permitted to apply for operational funds, and that the board of directors should be the Council; the chairman of the Council as chairman of the board. He specifically asked for these two things, and that is all he asked for, from the standpoint of the recommendation of this committee.

I move to the effect that the incumbent councillors be the board of directors of the North Dakota Regional Medical Program. Further, that this board of directors be authorized by this association to apply for operational grants.

Dr. Little: I second the motion.

Dr. Hilts: Read from the report from Dr. Wright, page 102, last paragraph, in the Handbook. This is to clarify what Dr. Wright did say that the Council be designated as the board of directors of the Medical Research Foundation.

Dr. Giltner: There are two things here. The executive committee is working under the direction of the board of directors. I think the executive committee can go to the board of directors and ask for additional funds and this keeps it within the Council.

Dr. Ulmer: We are the only Regional Medical Program that does not have any operational funds to operate on simply because Dr. Christoferson wished to have an authorization from the House of Delegates of the State Medical Association. I think it is very important for us to authorize the Committee to go ahead. I would then back Dr. Burt's motion, that the executive committee of the Regional Medical Program may ask for approval by the Council. But you must remember, that this board of directors meets once a year while the executive committee meets once a month. You are going to hold up and hamstring the whole program, if you are going to insist that the Council approve this operational grant. This committee is not going to do anything contrary to this group.

Dr. Cameron: I ask how this executive committee is formed?

Dr. Ulmer: The Regional Medical Program of North Dakota has this Advisory Group of 70 people. They have rules and regulations and the chairman of the executive committee was appointed. The doctors still have control of this committee.

Dr. Dunnigan: It is true that at the August meeting in Grand Forks, that it was this body that approved the suggested executive committee in its entirety. This was voted on by the Advisory Committee. This executive committee is one that is formed by the medical group.

Dr. Mahowald: This is to clarify this matter. Your Council appropriated a given sum of money for the Ad Hoc Committee, established under the chairmanship of Dr. Christoferson, one year ago. The function of the Ad Hoc Committee was to determine a feasibility study for the State of North Dakota. There were founded other programs in other states with the object of us going in with them at that time. All the advice we had was that North Dakota would be unable to get a feasibility study. Dr. Christoferson decided that North Dakota would be able to get a feasibility program. Out of this evolved the corporation which you are now discussing. A charter was requested from the State authorities and granted. Under this original charter, the people who are the directors of this organization are the Council with the addition of the State President, who at that time was Dr. Toomey, and in addition to that we requested the executive secretary be named. The feasibility study was completed. It was accepted and the Ad Hoc Committee then ceased to exist. However, in order to have a vehicle that this could function, Dr. Christoferson was made chairman of the executive committee. Now, the question comes up, that we must have another step for the implementation of a feasibility study. The operational grant is the next phase we have to go into. These are going to be pretty well interwoven; feasibility and operational grant. The understanding of the Council is that the committee which Dr. Ulmer is speaking of, goes ahead and determines what is needed. This, then is referred back to the board of directors, or the Council, who say "yes" or "no." If yes, the money of the grant is approved by the government then this goes to the fiscal agent who is the University and they spend the money under the accountability of the Council.

Speaker Dahl: I will call the question. All those in favor of the amendment to the motion made by Dr. Burt. All Ayes. Motion carried. This portion of the report is now amended. All those in favor of adopting this portion of the report as amended? All Ayes. This portion of the report as amended is adopted.

Dr. Burt: (4) It is recommended by this reference committee that the reports of the Crippled Children's Committee be accepted totally, realizing that in the future the crippled children's problem will probably be taken care of by Title XIX, or the so-called "Medicaid Provision" in the law. It was felt that these children should be cared for by M.D.'s as in the past, and we would suggest that further implementation of Title XIX be referred to the legislative committee, hoping that they could limit the care of these patients to those people with an M.D. degree, by initiating appropriate legislation. I move the adoption of this portion of the report.

Dr. Lindelow: I second the motion.

Speaker Dahl: All those in favor? All Ayes. Motion passed.

Dr. Burt: (5) The Committee on Cardiovascular Diseases had no meetings during the year, largely because of indecision as to what was going to happen to the Cancer, Heart Disease and Stroke Program.

(6) The Committee on Cancer had no meetings during the year because of indecision as to what was going to happen to the Cancer, Heart Disease and Stroke Program.

Dr. A. C. Burt, *Chairman*
Dr. D. E. Skjei, *Vice-Chairman*
Dr. G. H. Hilts
Dr. G. R. Richardson
Dr. O. V. Lindelow

Dr. Burt: I move the adoption of the report as a whole as amended.

Dr. Skjei: I second the motion.

Speaker Dahl: All in favor? All Ayes. Motion passed and the report as a whole is adopted, as amended.

Speaker Dahl: May we now have the report of the Committee on Resolutions and New Business, Doctor Hieb, Chairman.

## Reference Committee on Resolutions and New Business

### RESOLUTION

WHEREAS, the members of the North Dakota State Medical Association, attending the 81st Annual Meeting of this Association in Minot, have enjoyed the hospitality and consideration of this great city, and

WHEREAS, the Mayor of Minot and his associates; the press, radio, hotels and businessmen have contributed to make this session a memorable one,

NOW, THEREFORE, BE IT RESOLVED that the House of Delegates express its appreciation by directing a copy of this Resolution to the Honorable Mayor of Minot, and the press.

Dr. Hieb: I move the adoption of this Resolution.

Dr. Dunnigan: I second the motion.

Speaker Dahl: All in favor? All Ayes. Motion passed.

### RESOLUTION

WHEREAS, the members of the North Dakota State Medical Association anticipate the increase in scientific knowledge to be gained from attendance at various exhibits, and

WHEREAS, the exhibitors have shown unusual effort and ingenuity in developing their exhibits and thereby adding to the scientific interest at this meeting,

NOW, THEREFORE, BE IT RESOLVED that the North Dakota State Medical Association extend to these exhibitors our hearty welcome and thanks and

BE IT FURTHER RESOLVED that a copy of this Resolution be forwarded to each exhibitor.

Dr. Hieb: I move the adoption of this Resolution.

Dr. Giltner: I second the motion.

Speaker Dahl: All in favor? All Ayes. Motion passed.

### RESOLUTION

WHEREAS, the Ladies of the Woman's Auxiliary to the North Dakota State Medical Association, through devoted enthusiasm and continuous efforts over the years have contributed diligently to the Medical Auxiliary Student Loan Fund of the Medical School of the University of North Dakota, and more recently to the American Medical Association Education and Research Fund, and

WHEREAS, these funds have enabled many medical students to complete their medical education, and

WHEREAS, the local Auxiliary Societies throughout the state have participated in many other commendable projects which reflect credit to their organization and to the medical profession,

NOW, THEREFORE, BE IT RESOLVED that the House of Delegates of the North Dakota State Medical Association convey to the Woman's Auxiliary our appreciation and thanks for their excellent work, and

BE IT FURTHER RESOLVED that a copy of this Resolution be directed to Mrs. L. G. Pray and her successor.

Dr. Hieb: I move the adoption of this Resolution.

Dr. Sandmeyer: I second the motion.

Speaker Dahl: All in favor? All Ayes. Resolution adopted.

### RESOLUTION

WHEREAS, the members of the North Dakota State Medical Association, attending the 81st Annual Meeting have thoroughly enjoyed and profited by an excellent scientific program, and

WHEREAS, the Host, the Fourth District Medical Society, and the various chairmen and committeemen have excelled in providing the members of the association with the graciousness of a fine convention,

NOW, THEREFORE, BE IT RESOLVED that the assembled delegates show their appreciation by a rising vote of thanks.

Dr. Hieb: I move the adoption of this Resolution.

Dr. Beithon: I second the motion.

Speaker Dahl: All in favor? All Ayes. Resolution adopted.

### RESOLUTION

WHEREAS, Dr. V. J. Fischer, President of the North Dakota State Medical Association for the year 1967-68, did, in the years prior to his term of office and in the year 1966-67 as President-elect of this association, show an intense interest and devotion to the affairs and interests of the association, and

WHEREAS, with the aid of his experience, knowledge and concern, relative to the practice of medicine in North Dakota, and with his dedication to the fulfillment of his office, Dr. Fischer did, in such an exemplary manner, lead this association through the past year,

NOW, THEREFORE, BE IT RESOLVED that the assembled delegates show their appreciation by a rising vote of thanks.

Dr. Hieb: I move the adoption of this Resolution.

Dr. Goff: I second the motion.

Speaker Dahl: All in favor? All Ayes. Resolution adopted.

### RESOLUTION

WHEREAS, Mr. Lyle Limond and his competent staff, Vern Wagner, Mrs. Margaret Fremming and Mrs. Myrtle Kohler, have served the State Medical Association with diligence and proficiency during the immediate past year, as they have in preceding years.

NOW, THEREFORE, BE IT RESOLVED that this House of Delegates formally show its appreciation with the adoption of this Resolution.

Dr. Hieb: I move the adoption of this Resolution.

Dr. Dunnigan: I second the motion.

Speaker Dahl: All in favor? All Ayes. Resolution adopted.

### RESOLUTION

WHEREAS, in 1966 the following resolution was passed:

"NOW, THEREFORE BE IT RESOLVED that the North Dakota State Medical Association concur in keeping the composition of the North Dakota State Board of Medical Examiners as presently prescribed by law, and

BE IT FURTHER RESOLVED that the North Dakota State Medical Association oppose the formation of a composite board of medical examiners with doctors of osteopathy, and oppose the granting of full privileges of medical practice to Doctors of Osteopathy in North Dakota."

AND WHEREAS, the Board of Trustees of the American Medical Association have made the following recommendations:

> 1] Authorize the Board of Trustees to begin prompt negotiations directed toward the beginning conversion of schools of osteopathy to schools of medicine.
>
> It is understood that in the conduct of these negotiations, sufficient funds to support such conversions as appear to be feasible will have to be secured from without and within the AMA.
>
> 2] Authorize the Council on Medical Education to undertake negotiations to establish means by which selected students with proven satisfactory scholastic ability in schools of osteopathy may be considered by schools of medicine for transfer into medical school classes.

NOW, THEREFORE, BE IT RESOLVED that we reaffirm our position as stated in the Resolution of 1966.

Dr. Hieb: I move the adoption of this resolution.

Dr. Dunnigan: I second the motion.

Speaker Dahl: All in favor? All Ayes. Resolution adopted.

### RESOLUTION

WHEREAS, this is a most important political year with the presidency, 34 U.S. Senate seats, 435 seats in the House of Representatives, and a host of state and local offices being contested and

WHEREAS, our Medical Auxiliary participation in legislative activities has not been fully utilized in the past; and

WHEREAS, the North Dakota Medical Auxiliary has graciously volunteered its help in legislative activity,

NOW, THEREFORE, BE IT RESOLVED that copies of this Resolution be forwarded to the members of the Legislative Committee and that they be encouraged to enlist the aid and support of the Medical Auxiliary in such legislative activity as they deem advisable,

Dr. Hieb: I move the adoption of this resolution.

Dr. Dunnigan: I second the motion.

Speaker Dahl: All in favor? All Ayes. Resolution adopted.

### RESOLUTION

WHEREAS, there have been documented numerous instances of excessive weight loss of students participating in the public school wrestling program, and

WHEREAS, this excessive weight loss may jeopardize the general health and well-being of the student participant, and

WHEREAS, the North Dakota High School Activities Association has stated that it will be required that the family or school physician shall determine the lowest weight class in which a boy may wrestle prior to the first meet,

NOW, THEREFORE, BE IT RESOLVED that the North Dakota State Medical Association commend the North Dakota

High School Association for their position on this important problem; and

BE IT FURTHER RESOLVED that the North Dakota State Medical Association offer their cooperation in this endeavor and medical aspects of sports activities.

Dr. Hieb: I move the adoption of this resolution.

Dr. Goff: I second the motion.

Speaker Dahl: All in favor? All Ayes. Resolution adopted.

RESOLUTION

WHEREAS, Dr. Malcolm Cameron has presented a proposal for a new publication devoted to North Dakota medicine and the activities in medicine in general in the state of North Dakota, and

WHEREAS, we feel that his proposal has merit and will deserve considerable exploration and study,

NOW, THEREFORE, BE IT RESOLVED that the President of the North Dakota State Medical Association refer this proposal to the appropriate study body.

Dr. Hieb: I move the adoption of this resolution.

Dr. Dunnigan: I second the motion.

Speaker Dahl: All those in favor? All Ayes. Resolution adopted.

RESOLUTION

WHEREAS, we believe that immunizations should be done voluntarily on an educational basis, in opposition to mandatory legislation;

NOW, THEREFORE, BE IT RESOLVED that the North Dakota Medical Association oppose any mandatory statutes regarding mass immunizations.

Dr. Hieb: I move the adoption of this resolution.

Dr. Giltner: I second the motion.

Speaker Dahl: All in favor? All Ayes. Motion passed.

RESOLUTION

WHEREAS, the problem of recent difficulty with determination of fees for Christmas Seal x-rays has arisen,

NOW, THEREFORE, BE IT RESOLVED that this problem be referred to the Medical Economics Committee for their consideration.

Dr. Hieb: I move the adoption of this resolution.

Dr. Sandmeyer: I second the motion.

Speaker Dahl: All in favor? All Ayes. Resolution adopted.

RESOLUTION

WHEREAS, we encourage participation in the State Medical Association by its members,

NOW, THEREFORE, BE IT RESOLVED that the Handbook of the House of Delegates be mailed to each member of the State Medical Association as early as possible prior to the State Medical Association meeting, for a period of two years, with re-evaluation of the merits of this procedure at the end of that time.

Dr. Hieb: I move the adoption of this resolution.

Dr. Beithon: I second the motion.

Speaker Dahl: Is there any discussion on this?

Dr. Ulmer: How much would it cost to have this Handbook printed and sent to all members? How much does it cost now to issue these to the Delegates of the House?

Speaker Dahl: It would cost approximately $1,600.00 to send these to all members. It costs from $900.00 to $1,000.00 to mimeograph and send the Handbook now, to all the Delegates. All in favor? All Ayes. Resolution adopted.

RESOLUTION

WHEREAS, the death and destruction on our highways continues at an ever increasing rate, and

WHEREAS, many innocent victims result, and

WHEREAS, the Fifth Amendment to the United States Constitution protects an individual against being forced to testify against himself, and

WHEREAS, the taking of blood for determination of blood alcohol has been construed both as an act of self-incrimination and an assault against said person, and

WHEREAS, the innocent public deserves protection against unnecessary risk at the hands of the alcoholic and otherwise dangerous driver,

NOW, THEREFORE, BE IT RESOLVED that the North Dakota State Medical Association go on record as favoring a new law under the implied consent principle that any highway accident where fatality results, legal anthorities may obtain such tests as necessary to determine the presence or abuse of alcohol in the systems of all passengers and/or drivers.

Dr. Hieb: I move the adoption of this resolution.

Dr. Goff: I second the motion.

Speaker Dahl: All in favor? All Ayes. Motion passed.

RESOLUTION

WHEREAS, medical, pharmaceutical, and other scientific information and research contain many reports of investigations which support the contention that generic identity does not necessarily assure equal therapeutic effectiveness, and

WHEREAS, repeated refills of the same prescription with products of different manufacturers could lead to differences in effectiveness mislead the doctor and not be in the best interest of the patient, and

WHEREAS, preparation of a drug may contain many variables such as the crystalline size, the nature of the excipients, coloring agents and flavors, and tableting pressures, coating films and the orientation with the tablet, and

WHEREAS, only the attending physician has an opportunity to evaluate the effectiveness of the drugs currently available as well as the individual response of each of his patients to these medications, and

WHEREAS, Long Bill S 3323 (King, H.R. 16616) and the Montoya Bill S 2936 call for generic prescribing replete with all the above mentioned pitfalls,

NOW, THEREFORE, BE IT RESOLVED that the North Dakota State Medical Association oppose S 2936 and S 3323 (H.R. 16616) and

BE IT FURTHER RESOLVED that the treating physician should have the choice at all times of the decision on generic or brand name prescribing, and

BE IT FURTHER RESOLVED that the North Dakota State Medical Association reaffirm its previous position on this matter and direct copies of this resolution to the North Dakota Congressmen, Senate Finance Committee, to the House Ways and Means Committee, and to the North Dakota State Pharmaceutical Association.

Dr. Hieb: I move the adoption of this resolution.

Dr. Dunnigan: I second the motion.

Speaker Dahl: All in favor? All Ayes. Resolution adopted.

RESOLUTION

WHEREAS, in recent days, the Welfare Department has publicly proclaimed that they are in financial difficulties, and

WHEREAS, they are, by their own admission, unable to pay their current obligations, and

WHEREAS, they have arbitrarily arrived at an 8% cut in payments to hospitals for their services, a 10% cut in payments to Nursing Homes, and a 15% cut to all other medical services, and

WHEREAS, this circumstance has apparently arisen from a culmination of factors beginning with the governor's reducing the initial budget request, by the legislature further reducing the budget, by increased utilization of welfare services by the needy population of our state, and by the inability of the Welfare Board to properly anticipate the present financial difficulties, and

WHEREAS, the North Dakota State Medical Association recognizes that the State of North Dakota has had an outstanding welfare program,

NOW, THEREFORE, BE IT RESOLVED that the North Dakota State Medical Association recommends that the Welfare Department review their administration costs and practices, and

BE IT FURTHER RESOLVED that in the future the release of information to the public be complete and factual, and

BE IT FURTHER RESOLVED that in some areas of the state such as Newtown, N.D., where there is an unusually high percentage of welfare patients that the Welfare Board examine fee schedules for the physician on an individual basis, and

BE IT FURTHER RESOLVED that we reaffirm in principle that physicians should receive their usual and customary fee, and that all vendors of medical services should be restored to usual and customary fees as soon as feasible, and

BE IT FURTHER RESOLVED that the North Dakota State Medical Association reaffirm our principle to continue to provide full medical care for our needy population as had been done in the past regardless of remuneration.

Dr. Hieb: I move the adoption of this resolution.

Dr. Giltner: I second the motion.

Speaker Dahl: All in favor? All Ayes. Resolution adopted. I would like to commend Dr. Hieb and his committee for dealing with such a delicate situation, without creating any other knotty problems.

Dr. Hieb: I move the adoption of the report as a whole.

Dr. Dunnigan: I second the motion.

Speaker Dahl: All in favor? All Ayes. The report as a whole has been adopted. Dr. Hieb, do you have a report on New Business?

Dr. Hieb: The following motion was presented:

> That the time of the meeting of the Second Session of the House of Delegates be considered prime time, and shall commence as early as practicable on the morning of the last day, excluding all other functions.
>
> Signed: J. J. Moses, M.D.

This committee moves the acceptance of the above motion in principle.

Dr. Giltner: I second the motion.

Dr. Powers: There was a motion adopted by Blue Shield this morning that gives the State Board of Directors the prerogative to set the place and time of the annual meeting, for some other time if they so desire.

Speaker Dahl: All those in favor? All Ayes. Motion passed.

Dr. E. O. Hieb, *Chairman*
Dr. Ralph Dunnigan, *Vice-Chairman*
Dr. L. A. Giltner
Dr. J. A. Sandmeyer
Dr. Paul Beithon
Dr. John Goff

Speaker Dahl: May we now have the report of the reference committee to consider the report of the Committee on Constitution and By-Laws?

## Reference Committee to Consider the Report of the Committee on Constitution and By-Laws

Dr. Moses: The reference committee noted that all necessary verbiage deleted from the Constitution now resides in the rightful portion of the By-laws.

Discussion was centered chiefly on Chapter V, Section 2. Inasmuch as the president of the association is under no obligation to appoint any set names to the nominating committee, and further that due provision is maintained elsewhere in the by-laws to present nominations from the floor, no perpetuity exists. To allow the House of Delegates times to deliberate, your reference committee wishes to delete all of Section 2, and substitute the following:

> Section 2. The President of the Association shall appoint a Nominating Committee of three which shall submit at the first meeting of the Annual Session nominations for the offices of President, President-elect, First Vice-President, Second Vice-President, Secretary, Treasurer, Speaker and Vice-Speaker of the House of Delegates, and Delegate and Alternate Delegate to the American Medical Association.

Your reference committee notes that Chapter VIII, relating to Standing Commissions of the North Dakota Medical Association has already been approved by this House at its first meeting.

Much discussion was held on Chapter IX, Section 2, relating to suspension of a district for failure to submit a report or to pay its assessment by April 1st. This places the burden of adequate reports and assessment upon the individual component society, without which reports and assessments the annual session could not function.

It is noted, however, that Chapter XII, Section 7, safeguards the district society by proportional representation in the House of Delegates based on total paid-up membership as of December 31 of the preceding year.

At the request of the individual societies concerned, your reference committee wishes to change Chapter XIII, Section I, as follows:

> Paragraph 5—delete "Griggs" and add thereof "Dickey and LaMoure."
> Paragraph 7—delete "LaMoure and Dickey."
> Paragraph 10—add "Griggs."

Your reference committee notes with pleasure the ease of Amendment of the By-laws.

Chapter XIV, Section I, line 15, should be changed to read as follows:

> Reports of the Nominating Committee

Dr. Moses: I move the adoption of this portion of the report, as amended.

Dr. Poindexter: I second the motion.

Dr. Richardson: I would like a clarification of the reapportionment as above stated.

Dr. Moses: All this does is shift counties. The Societies came to us and we did this at their request. This still allows the individual member to attend the Society of his choice.

Speaker Dahl: All in favor? All Ayes. Motion passed.

Dr. Moses: Your reference committee discussed the "Rules and Procedures for Mediation." Legal counsel present discussed this at length and presented his opinion that it is a workable and very satisfactory method of handling mediation. Your committee feels that it will take experience to determine if any future changes are necessary. The procedure adequately contains provision for mediation primarily on a local level as well as on an intercomponent society level. I move the adoption of this portion of the report.

Dr. Raasch: I second the motion.

Speaker Dahl: All in favor? All Ayes. Motion passed.

Dr. Moses: Your reference committee notes the large amount of time and effort spent in preparing the revised Constitution and By-laws and Rules and Procedure for Mediation, and wishes to thank the members of the Committee on Constitution and By-Laws, the executive secretary, and assistant executive secretary, and Mr. R. W. Wheeler, legal counsel.

Dr. J. J. Moses, *Chairman*
Dr. W. T. Powers, *Vice-Chairman*
Dr. M. H. Poindexter
Dr. R. F. Raasch

Dr. Moses: I move the adoption of the report as a whole.

Dr. Raasch: I second the motion.

Speaker Dahl: All in favor? All Ayes. Motion passed. This is the first reading of the Amended Constitution and By-Laws, and Rules and Procedures, and it will be brought before the House of Delegates at their next annual session for final action, and approval.

Regarding the setting of the dues for the coming year, the Chairman of the Council, Dr. Mahowald, will give the report as Dr. Nierling, the treasurer, is not here at this session.

Dr. Mahowald: If you will look in your Handbook you can see the Treasurer's Report. The budget was approved by the Council as of December, 1967 meeting, which is applicable to the year 1968. It was decided at this time that in view of the fact that the proposed budget was more than the income and that the income would be inadequate to the amount of approximately $6,000.00 to $7,000.00 and that the budget could not be cut adequately, the Council recommended a $25.00 state dues increase, so that the state dues for 1968 is $125.00. The question comes up as to the reserve that the association has. This has been determined by previous Councils and also it was advocated by our legal counsel that there should be available one year's dues in reserve for this association to adequately function. This is the basis for this increase in dues in 1968 and from now on.

Speaker Dahl: Are there any questions?

Dr. Mahowald: We are recommending a $25.00 increase which gives us $125.00 annual state dues.

Dr. Beithon: I move that the dues be $125.00 for the year 1968 and from now on.

Dr. Giltner: I second the motion.

Speaker Dahl: All in favor? All Ayes. Motion carried, and our dues are now $125.00 annually.

We will now have the Nominating Committee report and the election of officers. The three members of the Nominating Committee all had to be absent from this meeting, so the Secretary, Dr. Buckingham, will report for this committee. This is in a sealed envelope, and no one has seen the results of the Nominating Committee.

We will have the report as it is written and move that we accept this report, putting these names on the floor. Then we will ask for nominations from the floor for each office. By accepting this report, we are not electing these officers.

Dr. Buckingham: The Nominating Committee begs to submit the following nominations:

| | |
|---|---|
| President | Dr. C. H. Peters, Bismarck |
| President-Elect | Dr. R. C. Painter, Grand Forks |
| First Vice-President | Dr. T. E. Pederson, Jamestown |
| Second Vice-President | Dr. Frank DeCesare, Fargo |
| Speaker of the House of Delegates | Dr. P. O. Dahl, Bismarck |
| Vice-Speaker of the House of Delegates | Dr. G. L. Countryman, Grafton |
| Secretary | Dr. R. W. McLean, Hillsboro |
| Treasurer | Dr. R. D. Nierling, Jamestown |
| Delegate to the A.M.A. | Dr. J. J. Moses, Bismarck |
| Alternate Delegate to the A.M.A. | Dr. Paul Beithon, Wahpeton |

### COUNCILLORS

Terms Expiring 1971

| | |
|---|---|
| First District | Dr. R. J. Ulmer, Fargo |
| Third District | Dr. J. A. Sandmeyer, Grand Forks |
| Sixth District | Dr. R. B. Tudor, Bismarck |

The following names will be submitted to Governor William Guy for reappointment to the State Board of Medical Examiners for his consideration: Dr. A. R. Gilsdorf, Dickinson; and Dr. J. W. Cleary, Bismarck; and to fill the vacancy left by Dr. A. G. Fortney who is not eligible for reappointment, the following two names are submitted: Dr. C. J. Klein, Valley City; and Dr. J. M. Van Der Linde, Jamestown.

State Health Council: Dr. P. R. Gregware, Bismarck, who is just finishing his first three year term and is eligible for his second term.

Respectfully submitted:
Dr. G. W. Toomey, *Chairman*
Dr. A. R. Gilsdorf
Dr. Joseph Sorkness

Motion made and seconded that the Nominating Committee Report be accepted. Motion passed.

Speaker Dahl: The president-elect by constitution is not voted upon but advances to the office of the president. The chair now declares the office of the president-elect open for nominations from the floor. We have Dr. R. C. Painter as one nominee for this office.

Dr. Giltner: I move that the nominations be closed and that the Secretary be instructed to cast an unanimous ballot for Dr. Painter for the office of president-elect.

Dr. Sandmeyer: I second the motion.

Speaker Dahl: All in favor? All Ayes. Dr. Painter is elected unanimously to the office of President-Elect. May we have nominations from the floor for the office of First Vice-President?

Dr. Miles: I move that the nominations be closed and that the Secretary be instructed to cast a unanimous ballot for Dr. Tom Pederson as First Vice-President.

Dr. Moses: I second the motion.

Speaker Dahl: All in favor? All Ayes. Dr. Pederson is elected unanimously as First Vice-President. May we have nominations from the floor for Second Vice-President?

Dr. Goff: I move that nominations be closed and that the secretary be instructed to cast a unanimous ballot for Dr. Frank DeCesare, for the office of Second Vice-President.

Dr. Cameron: I second the motion.

Speaker Dahl: All in favor? All Ayes. Dr. DeCesare is elected unanimously as Second Vice-President. May we have nominations from the floor for the Speaker of the House.

Dr. Richardson: I move that the nominations cease and that the secretary be instructed to cast a unanimous ballot for Dr. Dahl as Speaker.

Dr. Johnson: I second the motion.

Speaker Dahl: All in favor? All Ayes. Dr. Dahl is elected Speaker of the House. Nominations are now open for Vice-Speaker of the House.

Dr. Sandmeyer: I move the nominations cease and that the secretary cast a unanimous ballot for Dr. Countryman as Vice-Speaker.

Dr. Giltner: I second the motion.

Speaker Dahl: All in favor? All Ayes. Dr. Countryman is elected Vice-Speaker of the House. May we have nominations from the floor for Secretary.

Dr. Ulmer: I move that the nominations cease and that the secretary cast a unanimous ballot for Dr. McLean as Secretary.

Dr. Skjei: I second the motion.

Speaker Dahl: All in favor? All Ayes. Dr. McLean is now elected Secretary of the Association. May we have nominations for Treasurer?

Dr. Miles: I move that nominations cease and that the secretary cast a unanimous ballot for Dr. Nierling as Treasurer.

Dr. Moses: I second this motion.

Speaker Dahl: All in favor? All Ayes. Motion passed and Dr. Nierling is elected as Treasurer. May we have nominations from the floor for the A.MA.. Delegate.

Dr. Dunnigan: I move that nominations cease and that the secretary be instructed to cast a unanimous ballot for Dr. Moses as the Delegate to the A.M.A.

Dr. Lindelow: I second the motion.

Speaker Dahl: All in favor? All Ayes. Dr. Moses is now elected as the Delegate to the American Medical Association. May we have nominations from the floor for the Alternate Delegate to the A.M.A.

Dr. Goff: I move that the nominations be closed and that the secretary be instructed to cast a unanimous ballot for Dr. Beithon as Alternate Delegate.

Dr. Giltner: I second the motion.

Speaker Dahl: All in favor? All Ayes. Dr. Beithon is now elected as Alternate Delegate to the A.M.A. May we have nominations for the office of Councillor of the First District?

Dr. DeCesare: I move that nominations cease and that the secretary be instructed to cast a unanimous ballot for Dr. Robert Ulmer Fargo, as Councillor from the First District.

Dr. Kulland: I second the motion.

Speaker Dahl: All in favor? All Ayes. Dr. Ulmer is now elected Councillor from the First District. May we have nominations from the floor for Councillor of the Third District?

Dr. Powers: I move that nominations cease and that the secretary cast a unanimous ballot for Dr. Sandmeyer for Councillor of the Third District.

Dr. Evans: I second the motion.

Speaker Dahl: All in favor? All Ayes. Dr. Sandmeyer is now elected the Councillor from the Third District. May we have nominations for Councillor of the Sixth District.

Dr. Moses: I move that nominations be closed and that the secretary cast a unanimous ballot for Dr. Tudor as Councillor from the Sixth District.

Dr. Dunnigan: I second the motion.

Speaker Dahl: All in favor? All Ayes. Dr. Tudor is now elected as Councillor from the Sixth District.

It has been recommended by the Nominating Committee that the names of Drs. Gilsdorf and Cleary be reappointed to the positions on the State Board of Medical Examiners, and that the names of Dr. Klein and Dr. Van Der Linde be submitted for the vacancy, left by Dr. A. C. Fortney who is not eligible for reappointment. Are there any other names this House wishes to present?

Dr. Richardson: I move that the Nominating Committee's wishes be respected and that the names submitted by the Nominating Committee be the only names sent to the Governor by this Body.

Dr. Jayapathy: I second this.

Speaker Dahl: All those in favor? All Ayes. Motion passed.

The name of Dr. Gregware has been suggested for reappointment to the State Health Council. Are there any other names the House wishes to present?

Dr. Goff: I move that Dr. Gregware be the only name submitted for this position.

Dr. Beithon: I second the motion.

Speaker Dahl: All in favor? All Ayes. Motion passed.

It is now time for the selection of the place for the next annual meeting. Do we have any invitations?

Dr. Sandmeyer: I move that the 1969 state meeting be held in Grand Forks, N.D.

Dr. Evans: I second the motion.

Speaker Dahl: All in favor. All Ayes. Motion passed, and the meeting will be held in Grand Forks in 1969. May we have an invitation for the state meeting in 1970?

Dr. Goff: I move that the 1970 Convention be held in Fargo, N.D.

Dr. Ulmer: I second the motion.

Speaker Dahl: All in favor? All Ayes. The meeting in 1970 will be held in Fargo, N.D.

There being no further business, motion made, seconded and passed to adjourn. Adjournment 4:45 p.m.

## SCIENTIFIC PROGRAM

### Friday, May 3, 1968

Minot Municipal Auditorium
Minot, North Dakota

9:00 A.M. — Registration

10:30 - 11:15 A.M. — "Metabolic Response to Surgery and Anesthesia" A. H. Fortman, M.D., and Riffat Morgan, M.D., Bismarck, N.D.

11:15 - 12:00 Noon — "Platelet Transfusions", James J. Bergin, Lt. Col., M.C., U.S.A., Denver, Colo.

NOON RECESS

2:00 - 2:45 P.M. — "The Changing Pathogenesis of Some Leukemias and Lymphomas with Its Relationship to Treatment and Diagnosis", Payton T. Pratt, M.D., Omaha, Nebraska.

2:45 - 3:15 P.M. — INTERMISSION

3:15 - 4:30 P.M. — "Hypospadias", C. Donald Creevy, M.D., Minneapolis, Minn. (Dr. Creevy was unable to appear. Dr. K. S. Helenbolt, Grand Forks, N. Dak. presented a scientific paper in his place.)

4:30 - 5:15 P.M. — "Chemotherapy and Solid Tumors", William S. Fletcher, M.D., Portland, Ore.

### Saturday, May 4, 1968

9:00 A.M. — Registration

9:30 - 10:30 A.M. — "The Forgotten Diabetic", Edwin W. Gates, M.D., President, American Diabetes Association, Niagara Falls, N.Y.

10:30 - 11:15 A.M. — INTERMISSION

11:15 - 12:00 Noon — "Medical Economics—Today and Tomorrow", Charles A. Hoffman, M.D., Huntington, W. Va.

NOON RECESS

2:00 - 2:45 P.M. — "Recent Advances in Allergy", Kenneth Mathews, M.D., Ann Arbor, Mich.

2:45 - 3:15 P.M. — INTERMISSION

3:15 - 4:00 P.M. — "The Newer Concepts in the Treatment of Acute Myocardial Infarction", C. E. Harrison, Jr., M.D., Rochester, Minn.

4:00 - 4:45 P.M. — "Middle Third Facial Fractures", Jerome W. O'Hearn, M.D., Fargo, N.D.

# North Dakota State Medical Association Roster — 1968

## MEMBERSHIP BY DISTRICTS

### First District

| | |
|---|---|
| Amidon, Blaine F. | Dakota Clinic, Fargo |
| Armstrong, William B. | 801 6th Avenue N., Fargo |
| Bacheller, Stephen C. | Enderlin |
| Bakke, Hans | Lisbon |
| Barnard, Donald M. | Fargo Clinic, Fargo |
| Barnes, Michael, J. | Hankinson |
| Barth, Eric B. | Dakota Clinic, Fargo |
| Beithon, Elmer J. | Red River Valley Clinic, Wahpeton |
| Beithon, Paul J. | Red River Valley Clinic, Wahpeton |
| Beltz, Melvin E. | Wahpeton Clinic, Wahpeton |
| Bjerke, Leon A. | Red River Valley Clinic, Wahpeton |
| Borland, Verl G. | Fargo Clinic, Fargo |
| Burt, Arthur C. | Medical Arts Building, Fargo |
| Bushell, Robert P. | Fargo Clinic, Fargo |
| Christoferson, Lee A. | Box 32, Fargo |
| Christu, Chris M. | Fargo Clinic, Fargo |
| Darrow, Kent E. | Dakota Clinic, Fargo |
| DeCesare, Francis A. | Dakota Clinic, Fargo |
| Dodds, G. Alfred | Fargo Clinic, Fargo |
| Donat, T. L. | 408 Medical Arts Building, Fargo |
| Ehlen, Matt J. | Fargo Clinic, Fargo |
| Engstrom, Perry H. | Red River Valley Clinic, Wahpeton |
| Everett, S. Fred | Dakota Clinic, Fargo |
| Fercho, Calvin K. | 304 Medical Arts Building, Fargo |
| Ferguson, William T., Jr. | Dakota Clinic, Fargo |

| | |
|---|---|
| Fortney, Arthur O. | Laguna Hills, Cal. |
| Foster, George C. (Ret'd) | 1602 South 6th Street, Fargo |
| Gaebe, Robert C. | Box 1567, Fargo |
| Geib, Marvin J. | Box 1567, Fargo |
| Geston, Robert L. | 402 Sheyenne Street, West Fargo |
| Gillam, John S. | Fargo Clinic, Fargo |
| Glover, Jack Foy, Jr. | Dakota Clinic, Fargo |
| Goff, John R. | Fargo Clinic, Fargo |
| Goltz, Neill F. | Fargo Clinic, Fargo |
| Gustafson, Maynard B. | Box 32, Fargo |
| Hager, Jerome P. | Box 1567, Fargo |
| Hall, G. Howard | Fargo Clinic, Fargo |
| Halliday, D. Ross | 306 Medical Arts Building, Fargo |
| Hamilton, Thomas M. | Fargo Clinic, Fargo |
| Harrington, Ryan B. | Box 32, Fargo |
| Hawn, Hugh W. | 624 Gate City Building, Fargo |
| Haynes, George H. | Lisbon |
| Heilman, Charles O. | 49 18th Avenue North, Fargo |
| Houghton, James F. | Dakota Clinic |
| Hunter, C. M. | Medical Arts Building, Fargo |
| Hunter, G. Wilson | Fargo Clinic, Fargo |
| Irvine, Vincent S. | Lidgerwood |
| Ivers, Robert Ralph | Box 32, Fargo |
| Jaehning, David G. | Hotel Wahpeton, Wahpeton |
| Jordheim, Robert | Fargo Clinic, Fargo |
| Kana, Dale C. | Medical Arts Building, Fargo |
| Kelly, William A. | Medical Arts Building, Fargo |
| Kohlmeyer, Albert C. | Box 1567, Fargo |
| Kulland, Roy E. | 402 Cheyenne Street, West Fargo |
| Lamb, Donald L. | 204 Medical Arts Building, Fargo |
| Lancaster, William E. G. | 16333 Redington Drive,<br>Redington Beach, Florida |
| Landa, Marshall | Dakota Clinic, Fargo |
| Larson, G. Arthur (Ret'd) | 1538 9th St. South, Fargo |
| Larson, Leland J. | Fargo Clinic, Fargo |
| Lawrence, Donald H. | N. Dak. State University, Fargo |
| LeBien, Wayne E. | Fargo Clinic, Fargo |
| Lefsrud, John B. | Box 2013, Fargo |
| Leigh, John E. | Fargo Clinic, Fargo |
| LeMar, John D. | Fargo Clinic, Fargo |
| Levine, Leonard | Fargo Clinic, Fargo |
| Lewis, A. K. | Lisbon |
| Lewis, T. H. | 302 Black Building, Fargo |
| Lind, Jackson W. | Medical Arts Building, Fargo |
| Lindsay, Douglas T. | Fargo Clinic, Fargo |
| Lytle, Francis T. | Fargo Clinic, Fargo |
| McMahon, John M. | Dakota Clinic, Fargo |
| Macaulay, Warren L. | Fargo Clinic, Fargo |
| Magill, Jane | Medical Arts Building, Fargo |
| Magill, Gordon B. | Medical Arts Building, Fargo |
| Mazur, Bernard A. | Dakota Clinic, Fargo |
| Melton, Frank M. | Dakota Clinic, Fargo |
| Mendoza, Eusebio | 400 Medical Arts Building, Fargo |
| Miller, Herbert H. | 509½ Dakota Avenue, Wahpeton |
| Miller, Joseph W. | Dakota Clinic, Fargo |
| Murray, James B. | Dakota Clinic, Fargo |
| Nagle, Duane W. | Fargo Clinic, Fargo |
| Norum, Henry A. | Fargo Clinic, Fargo |
| Obert, Gerard J. | St. Lukes Hospital, Fargo |
| O'Hearn, Jerome W. | Fargo Clinic, Fargo |
| Ohrt, Harry A. | 408 Medical Arts Building, Fargo |
| Olafson, Richard A. | Box 32, Fargo |
| Olin, Ronald | Fargo Clinic, Fargo |
| Oliver, James | 404 Medical Arts Building, Fargo |
| Palmer, Wesley J. | Lisbon |
| Poindexter, Marlin H., Jr. | Fargo Clinic, Fargo |
| Poole, Ernest E. | Sasse Building, Lidgerwood |
| Pray, Laurence G. | Fargo Clinic, Fargo |
| Rillo, Antonio R. | Red River Valley Clinic, Wahpeton |
| Rogers, Robert G. | Dakota Clinic, Fargo |
| Schneider, Joseph F. | Medical Arts Building, Fargo |
| Schutt, Allan J. | Fargo Clinic, Fargo |
| Schutt, Ann Holtzmuller | 702 1st Avenue South, Fargo |
| Sedlak, Oliver A. | 301 8th Street South, Fargo |
| Seifert, Richard H. | 402 Medical Arts Building, Fargo |
| Spier, J. J. | Dakota Hospital, Fargo |
| Stafne, William A. | 2701 12th Street South, Fargo |
| Stevens, Charles A., Jr. | Dakota Clinic, Fargo |
| Story, Robert D. | Fargo Clinic, Fargo |
| Swanson, Joel C. | 1220 8th Street South, Fargo |
| Thompson, George R. | Fargo Clinic, Fargo |
| Thompson, Stanley D. | Fargo Clinic, Fargo |
| Thorfinnson, Hugh D. | Medical Arts Building, Fargo |
| Traynor, Mack V. | Fargo Clinic, Fargo |
| Triggs, Perry O. | Fargo Clinic, Fargo |
| Ulmer, Robert John | Dakota Clinic, Fargo |
| Veitch, Abner | 502 Oak Street, Lisbon |
| Wall, Wendell H. | Wahpeton Clinic, Wahpeton |
| Wasemiller, E. R. | Wahpeton Clinic, Wahpeton |
| Webster, William O. | Fargo Clinic, Fargo |
| Weible, Ralph D. | Dakota Clinic, Fargo |
| Wenz, E. P. | Dakota Clinic, Fargo |
| Wenzel, James B. | Dakota Clinic, Fargo |
| Weyers, Henry J. | West Fargo Clinic, West Fargo |
| Williams, N. S. | Dakota Clinic, Fargo |
| Wiltse, Glenn L. | Wahpeton Clinic, Wahpeton |
| Wold, Lester E. | Fargo Clinic, Fargo |
| Zauner, Richard J. | In Residency |

## Second District

| | |
|---|---|
| Cook, Stuart John | Rolette |
| Corbett, Conner A. | Lake Region Clinic, Devils Lake |
| Coultrip, Raymond L., Jr. | In Service |
| Eylands, Jon V. | Johnson Clinic, Rugby |
| Fawcett, John C. | Lake Region Clinic, Devils Lake |
| Fawcett, Robert M. | Lake Region Clinic, Devils Lake |
| Fox, William R. | Johnson Clinic, Rugby |
| Gilbertson, Ernest V. | Lake Region Clinic, Devils Lake |
| Glasner, Duane D. | Rolla |
| Hillman, R. S. Lyle | Johnson Clinic, Rugby |
| Hilts, George H. | Cando |
| Johnson, Christian G. | Johnson Clinic, Rugby |
| Johnson, O. W. | Johnson Clinic, Rugby |
| Kihle, Kenneth W. | Bottineau Clinic, Bottineau |
| Lazareck, I. L. | 411 Fourth Avenue, Devils Lake |
| Lund, A. B. | Leeds |
| McBane, Robert D. | Lake Region Clinic, Devils Lake |
| McIntyre, Donald G. | Johnson Clinic, Rugby |
| Mahoney, James H. | 411 4th Avenue, Devils Lake |
| Mari, Justo L. | Bottineau Clinic, Bottineau |
| Mattson, Clem J. | Box 46, San Haven |
| Miller, C. Robert | Bottineau Clinic, Bottineau |
| Mimay, Antonio | Maddock |
| Montgomery, Guy E. | Carrington |
| Neuenschwander, Allen R. | Rolla Clinic, Rolla |
| Overland, Arnold J. | Rolla Clinic, Rolla |
| Owens, Clarence G. | New Rockford |
| Pine, Louis F. | Lake Region Clinic, Devils Lake |
| Rinn, David A. | Cando |
| Sawchuk, John | Rolette |
| Schwinghamer, E. J. | New Rockford |
| Seibel, Glenn W. | New Rockford |
| Terlecki, Jaroslaw | Minnewaukan |
| Toomey, Glenn W. | Lake Region Clinic, Devils Lake |
| Towarnicky, Marvin J. | Fessenden |
| Turkula, William | Lake Region Clinic, Devils Lake |
| Voglewede, William C. | Carrington |
| Walker, H. Charles, Jr. | Mercy Hospital, Devils Lake |

## Third District

| | |
|---|---|
| Barcome, Donald F. | University of N. Dak., Grand Forks |
| Barrie, James G. | Park River |
| Benson, Theodore Q. | 1600 University Ave., Grand Forks |
| Clark, Rodney | Grand Forks Clinic, Grand Forks |
| Clayburgh, Ben J. | 201 South 4th St., Grand Forks |
| Countryman, G. L. | 1004 Hill Avenue, Grafton |
| Culmer, A. E., Jr. | 27½ So. 3rd St., Grand Forks |
| Dailey, Walter C. | 27½ So. 3rd St., Grand Forks |
| DeLano, Robert H. | Northwood Deaconess Hospital, Northwood |
| Doss, R. Douglas | 1600 University Ave., Grand Forks |
| Eaton, Leicester P. | Grafton Clinic, Grafton |
| Engelstad, Orlyn D. | University of N. Dak., Grand Forks |
| Evans, Harold W. | Grand Forks Clinic, Grand Forks |
| Flaten, Alfred N. | Edinburg |
| Gallego, Hector | Grand Forks Clinic, Grand Forks |
| Glaspel, Cyril J. | Grafton Clinic, Grafton |
| Goodall, William M. | Langdon |
| Goodwin, Daniel W. | Valley Medical Associates, Grand Forks |
| Graham, John H. | 31½ South 3rd, Grand Forks |
| Grinnell, Ernest L. | Grand Forks Clinic, Grand Forks |
| Harwood, Theodore H. | University of N. Dak., Grand Forks |
| Haugen, C. O. | Larimore |
| Haunz, Edgar A. | Grand Forks Clinic, Grand Forks |
| Helenbolt, Kenneth Stebbins | 1600 University Ave., Grand Forks |
| Helgason, Norman Murray | Cavalier |
| Helm, Richard K. | 27½ South 3rd St., Grand Forks |
| Hill, Frank A. | Grand Forks Clinic, Grand Forks |
| Isaacson, Peter G. | University of N. Dak., Grand Forks |
| Johnson, Edward M. | Cavalier Clinic, Cavalier |
| Kaluzniak, Nicholas | Langdon |
| Keig, William P., Jr. | 1600 University Avenue, Grand Forks |
| Krahn, Henry | Walhalla |
| Lambie, John Arthur | Grand Forks Clinic, Grand Forks |
| Larson, Eric J. | Cavalier |
| Leigh, James A. | 111 North 5th St., Grand Forks |
| Leigh, Ralph E. | 111 North 5th St., Grand Forks |
| Leigh, Richard | 1600 University Ave., Grand Forks |
| Lorentson, Carl E. | Grand Forks Clinic, Grand Forks |
| McKay, John F. (Ret'd) | 606 Reeves Drive, Grand Forks |
| McLaughlin, Blaine E. | University of N. Dak., Grand Forks |
| McLeod, John J. | 201 South 4th St., Grand Forks |
| Mahowald, Ralph E. | 1400 Grand Avenue, Grand Forks |
| Mann, Hamish | 1600 University Ave., Grand Forks |
| Marshall, Robert A. | 27 South Third St., Grand Forks |
| Meredith, William C. | Drayton |
| Muus, Jacob Meyer | McVille |
| Muus, O. Harold | 27½ South 3rd St., Grand Forks |
| Nelson, Wallace W. | University of N. Dak., Grand Forks |
| Nelson, William C. | Grand Forks Clinic, Grand Forks |
| Olson, James R. | Grand Forks Clinic, Grand Forks |
| Painter, Robert C. | Grand Forks Clinic, Grand Forks |
| Panek, A. F. | Milton |
| Pansegrau, Duane F. | Grand Forks Clinic, Grand Forks |
| Peake, Frances Margaret | 14½ South 3rd St., Grand Forks |
| Pettit, Samuel L. | Grand Forks Clinic, Grand Forks |
| Piltingsrud, Harold R. | Park River |
| Powers, William T. | Valley Medical Associates, Grand Forks |
| Prochaska, Leonard J. | 517 1st Nat'l. Bank Bldg., Grand Forks |
| Ralston, Lloyd S. | Grand Forks Clinic, Grand Forks |
| Rand, Charles C. | State School, Grafton |
| Saiki, A. K. | University of N. Dak., Grand Forks |
| Sande, C. W. | Northwood |
| Sandmeyer, John A. | Grand Forks Clinic, Grand Forks |
| Schafer, Thomas | Grand Forks Clinic, Grand Forks |
| Scheflo, Myron Wayne | 1004 Hill Ave., Grafton |
| Silverman, Louis B. | Grand Forks Clinic, Grand Forks |
| Tarpley, Harold I. | Valley Medical Associates, Grand Forks |
| Teevens, William P. | Grafton Clinic, Grafton |
| Tompkins, C. R. | 1004 Hill Ave., Grafton |
| Vandergon, Keith G. | 1400 Grand Ave., Grand Forks |
| Vitums, Arvids | State School, Grafton |
| Warner, Robert C. | Grand Forks Clinics, Grand Forks |
| Wasdahl, Walter | University of N. Dak., Grand Forks |
| Webber, Freeman B. | Harvey |
| Wilson, George A. | Grand Forks Clinic, Grand Forks |
| Wilson, Russell H. | University of N. Dak., Grand Forks |
| Woutat, Philip H. | Grand Forks Clinic, Grand Forks |
| Youngs, Nelson A. | Grand Forks Clinic, Grand Forks |

## Fourth District

| | |
|---|---|
| Amstutz, Kenneth N. | Northwest Clinic, Minot |
| Ayash, John J. | 123 2nd Avenue S.E., Minot |
| Bermudez, Enrique | Garrison Clinic, Garrison |
| Blatherwick, Robert | Parshall |
| Boyle, John T. | Garrison Clinic, Garrison |
| Boyum, Lowel E. | Harvey Medical Center, Harvey |
| Breslich, Paul J. | Northwest Clinic, Minot |
| Cameron, Angus L. | Northwest Clinic, Minot |
| Cameron, A. Malcolm | Northwest Clinic, Minot |
| Devine, John Leo, Jr. | Great Plains Clinic, Minot |
| Dormont, Richard E. | Northwest Clinic, Minot |
| Erenfeld, Fred R. | 617 N. Broadway, Minot |
| Faulconbridge, Albert J. | Mohall |
| Fischer, V. J. | Medical Arts Clinic, Minot |
| Flath, Milford G. | Stanley |
| Flickinger, Dale B. | Medical Arts Clinic, Minot |
| Gammell, Robert T. | Kenmare |
| Garrison, M. W. | Garrison Bldg., Minot |
| Giltner, Lloyd A. | Medical Arts Clinic, Minot |
| Gokavi, Walter A. | Mohall |
| Goodman, Robert | Powers Lake |
| Halliday, David J., Jr. | Kenmare |
| Halverson, C. H. | 401 S. Main, Minot |
| Hammargren, August F. | Harvey Medical Center, Harvey |
| Hart, George M. | Minot Fed. Savings & Loan Bldg., Minot |
| Heidorn, Guenther H. | Main Medical Bldg., Minot |
| Hordinsky, Bohdan Z. | Drake |
| Huntley, Wellington B. | 315 So. Main, Minot |
| Hurly, William C. | Medical Arts Clinic, Minot |
| Huss, Bernard Jr. | Medical Arts Clinic, Minot |
| Ilvedson, Ronald E. | Medical Arts Clinic, Minot |
| Jayapathy, B. | 123 2nd Ave. S.E., Minot |
| Kaljot, Victor | Northwest Clinic, Minot |
| Keek, Stanley, W. | Minot Fed. Savings & Loan Bldg., Minot |
| Kermott, L. H. Jr. | 401 Main St., South, Minot |
| Kohl, D. L. | 123 2nd Ave. S.E., Minot |
| Kryston, Rosalie Bierer | 1412 7th St., S.W., Minot |
| Lampert, M. T. | 407 1st Natl. Bank Bldg., Minot |
| Larson, Richard S. | Velva |

| | |
|---|---|
| Leonard, Kenneth O. | Garrison Clinic, Garrison |
| Leonard, Kermit | Garrison Clinic, Garrison |
| Libi, Bernadette Uy | Minot |
| Libi, Dionisio T. | EENT Clinic, Minot |
| Liu, Edward Ting | EENT Clinic, Minot |
| London, Carl B. | Northwest Clinic, Minot |
| Naegeli, Frank D. | Northwest Clinic, Minot |
| Nazli, Mahmet | Medical Arts Clinic, Minot |
| Odegard, Russell L. | Medical Arts Clinic, Minot |
| Olson, Burton G. | McCannel Clinic, Minot |
| Ram, Cecil C. | Medical Arts Clinic |
| Richardson, Gale R. | Main Medical Building, Minot |
| Ringo, G. Roy (Ret'd) | 119-A Main St. So., Minot |
| Rioux, Berchmans | 14-A Main St. So., Minot |
| Rowe, Paul H. | Northwest Clinic, Minot |
| Sahl, Jens, Jr. | Northwest Clinic, Minot |
| Sorenson, Alfred R. | Medical Arts Clinic, Minot |
| Sorenson, Roger | Medical Arts Clinic, Minot |
| Stump, Michael M. | Trinity Hospital, Minot |
| Uthus, O. S. | 307 Main Medical Bldg., Minot |
| Vandersteen, Paul R. | In Residency |
| Wall, Willard W. | Northwest Clinic, Minot |
| Wallis, Marianne | Main Medical Bldg., Minot |
| Westervelt, A. E. (Ret'd) | Bowdon |
| Wilson, Herbert J. | New Town |

### Fifth District

| | |
|---|---|
| Berg, Milton O. | Valley City Clinic, Valley City |
| Christianson, Gunnar | Valley City Clinic, Valley City |
| Cody, Gary D. | LaMoure |
| Craychee, Walter Albert | Oakes |
| Feist, Donald J. | Forman |
| Goven, John W. | Valley City Clinic, Valley City |
| Jensen, Clayton E. | Valley City Clinic, Valley City |
| Jensen, Warren R. | 117 N.W. Third, Valley City |
| Klein, C. J. | Valley City Clinic, Valley City |
| Macdonald, Neil A. | 130 Central Ave. So., Valley City |
| Vangerud, Paul T. | Valley City Clinic, Valley City |

### Sixth District

| | |
|---|---|
| Amos, James R. | N. Dak. Health Dept., Bismarck |
| Arneson, Charles A. | 405½ Bdwy., Bismarck |
| Arnold, Helmut | Quain & Ramstad Clinic, Bismarck |
| Baumgartner, Carl J. | Quain & Ramstad Clinic, Bismarck |
| Berg, Roger M. | Quain & Ramstad Clinic, Bismarck |
| Bertheau, Herman J. | Linton |
| Boerth, Edwin H. | Workmens Compensation Bureau, Bismarck |
| Brink, Norvel O. | Quain & Ramstad Clinic, Bismarck |
| Buckingham, T. W. | 405½ Bdwy., Bismarck |
| Buckingham, William M. | Capital City Clinic, Bismarck |
| Candy, Ardis Jean | Quain & Ramstad Clinic, Bismarck |
| Carlsen, Donald A. | 104 2nd Ave. N.W., Mandan |
| Cartwright, John Thompson | Missouri Valley Clinic, Bismarck |
| Chanco, Amado, Jr. | Linton |
| Chiu, Fang Luke | Turtle Lake |
| Cleary, Joseph W. | Missouri Valley Clinic, Bismarck |
| Curiskis, Adolfs A. | Elgin |
| Dahl, Phillip O. | Missouri Valley Clinic, Bismarck |
| Daniolos, Demetrios P. | Quain & Ramstad Clinic, Bismarck |
| Diven, Wilbur L. | 402½ Main St., Bismarck |
| Dunnigan, Ralph J. | Capital City Clinic, Bismarck |
| Eriksen, Johan A. | Box 1658, Bismarck |
| Ewert, Artur O. | Beulah |
| Fischer, Hans H. | Quain & Ramstad Clinic, Bismarck |
| Fleck, Roland | Ashley |
| Fortman, Albert H., Jr. | Capital City Clinic, Bismarck |
| Freise, Paul W. | Quain & Ramstad Clinic, Bismarck |
| Fricke, Roger W. | Quain & Ramstad Clinic, Bismarck |
| Gaebe, Otto C. (Ret'd) | 1215 N. Mandan St., Bismarck |
| Garrett, W. G. | Missouri Valley Clinic, Bismarck |
| Gess, Lowell A. | Quain & Ramstad Clinic, Bismarck |
| Girard, Bernard A. | 107 1st Ave. N.W., Mandan |
| Gonzalez, Gilberto | Missouri Valley Clinic, Bismarck |
| Goodman, Edward | Napoleon |
| Goughnour, Myron W. | Capital City Clinic, Bismarck |
| Gregware, P. Roy | Quain & Ramstad Clinic, Bismarck |
| Gutowski, Franz | Wishek |
| Henderson, Robert W. | Capital City Clinic, Bismarck |
| Hook, William F. | Quain & Ramstad Clinic, Bismarck |
| Icenogle, Grover D. | 608 W. Thayer, Bismarck |
| Imes, Seward K. | Quain & Ramstad Clinic, Bismarck |
| Jacobson, M. S. | Elgin |
| Jennings, Robert L. | Capital City Clinic, Bismarck |
| Johnson, George M. | Missouri Valley City, Bismarck |
| Johnson, Kenneth J. | Quain & Ramstad Clinic, Bismarck |
| Johnson, Marlin J. E. | Quain & Ramstad Clinic, Bismarck |
| Johnson, Paul L. | Quain & Ramstad Clinic, Bismarck |
| Kalnins, Arnold | Washburn |
| Kling, Robert R. | Quain & Ramstad Clinic, Bismarck |
| Klosterman, Paul F. | Capital City Clinic, Bismarck |
| Knudsen, Jerry M. | Missouri Valley Clinic, Bismarck |
| Kuplis, Haralds | Turtle Lake |
| Larson, Leonard W. | Quain & Ramstad Clinic, Bismarck |
| Lindelow, Olaf V. | Missouri Valley Clinic, Bismarck |
| Lommen, Marwin A. K. | Capital City Clinic, Bismarck |
| Lorenzen, F. C. (Ret'd) | Carson |
| McCullough, William F. | St. Alexius Hospital, Bismarck |
| Montz, Charles R. | Quain & Ramstad Clinic, Bismarck |
| Morgan, Margaret Edna | St. Alexius Hospital, Bismarck |
| Morgan, Riffat F. | St. Alexius Hospital, Bismarck |
| Moses, James J. | Cowan Bldg., Bismarck |
| Nuessle, Robert F. | Quain & Ramstad Clinic, Bismarck |
| Orchard, Welland J. | Linton |
| O'Toole, James K. | Public Welfare Bd., Bismarck |
| Owens, Percy L. | State Health Dept., Bismarck |
| Perrin, Edwin D. | Quain & Ramstad Clinic, Bismarck |
| Peters, Clifford H. | Quain & Ramstad Clinic, Bismarck |
| Peterson, Alice H. | State Health Dept., Bismarck |
| Pfeifle, Delano M. | Quain & Ramstad Clinic, Bismarck |
| Ramos, Pablo | Quain & Ramstad Clinic, Bismarck |
| Riecke, Wm. Charles | Quain & Ramstad Clinic, Bismarck |
| Riisager, Paul M. | 114 West Main, Mandan |
| Samuelson, Albert F. | Cowan Bldg., Bismarck |
| Sauer, John P. | Missouri Valley Clinic, Bismarck |
| Saxvik, Russell O. | Quain & Ramstad Clinic, Bismarck |
| Schoregge, Robert D. | Quain & Ramstad Clinic, Bismarck |
| Smeenk, H. Pieter | Quain & Ramstad Clinic, Bismarck |
| Smith, Clyde L. | Missouri Valley Clinic, Bismarck |
| Spielman, George H. (Ret'd) | Mandan |
| Splettstoesser, Robert W. | Ashley |
| Tarnasky, Ralph E. | St. Alexius Hospital, Bismarck |
| Thakor, Sushenkumar J. | Quain & Ramstad Clinic, Bismarck |
| Tolstedt, Grandon E. | Quain & Ramstad Clinic, Bismarck |
| Turnaciogulu, Omer F. | Quain & Ramstad Clinic, Bismarck |
| VanVranken, Arthur E. | Quain & Ramstad Clinic, Bismarck |

| | |
|---|---|
| Vinje, Edmund G. | Hazen Clinic, Hazen |
| Vinje, Ralph | 405 E. Bdwy., Bismarck |
| Waldschmidt, William D. | Quain & Ramstad Clinic, Bismarck |
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| Clement, Duane | Professional Bldg., Jamestown |
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| Fergusson, Victor D. | Edgeley |
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| Larson, Ernest J. | DePuy-Sorkness Clinic, Jamestown |
| Lucy, Robert E. | DePuy-Sorkness Clinic, Jamestown |
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| Melzer, Simon W. (Ret'd) | Woodworth |
| Miles, James V. Jr. | 1209 5th Ave. S.E., Jamestown |
| Nierling, Richard D. | DePuy-Sorkness Clinic, Jamestown |
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| Sand, Alfred | State Hospital, Jamestown |
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| Sorkness, Joseph | DePuy-Sorkness Clinic, Jamestown |
| Swenson, John A. | DePuy-Sorkness Clinic, Jamestown |
| Turner, Neville W. | California |
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| Woodward, Robert S. | DePuy-Sorkness Clinic, Jamestown |

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| Craven, Joseph D. | 411 Main St., Williston |
| Ellis, Gordon E. | Harmon Park Clinic, Williston |
| Fennell, William L. | Crosby Clinic, Crosby |
| Hagan, Edward J. | 411 Main St., Williston |
| Harvey, Eoin S. | Tioga Clinic, Tioga |
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| Jamieson, John | Harmon Park Clinic, Williston |
| Johnson, Alan K. (deceased) | Williston Clinic, Williston |
| Koch, Robert C. | Craven-Hagan Clinic, Williston |
| Lund, Carroll M. | Williston Clinic, Williston |
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| Olson, M. Jerome | Williston Clinic, Williston |
| Olson, Robert J. | 314 1st Ave. East, Williston |
| Skjei, Donald E. | Williston Clinic, Williston |
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| Gilsdorf, Amos R. | Dickinson Clinic, Dickinson |
| Guloien, Hans E. | Dickinson Clinic, Dickinson |
| Gumper, Arnold J. | Rodgers-Gumper Clinic, Dickinson |
| Hanewald, Walter C. | Rodgers-Gumper Clinic, Dickinson |
| Hankins, Robert E. | Mott |
| Hill, S. W. (Ret'd) | Regent |
| Larsen, Harlan C. | Rodgers-Gumper Clinic, Dickinson |
| Lorentzen, Donald E. | Hettinger |
| Nicely, Donald A. | Rodgers-Gumper Clinic, Dickinson |
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| Slominski, Henry | Richardton |
| Smith, Oscar M. (Ret'd) | 106 5th St., W., Dickinson |
| Spear, Albert E. (Ret'd) | 610 1st Ave. West, Dickinson |
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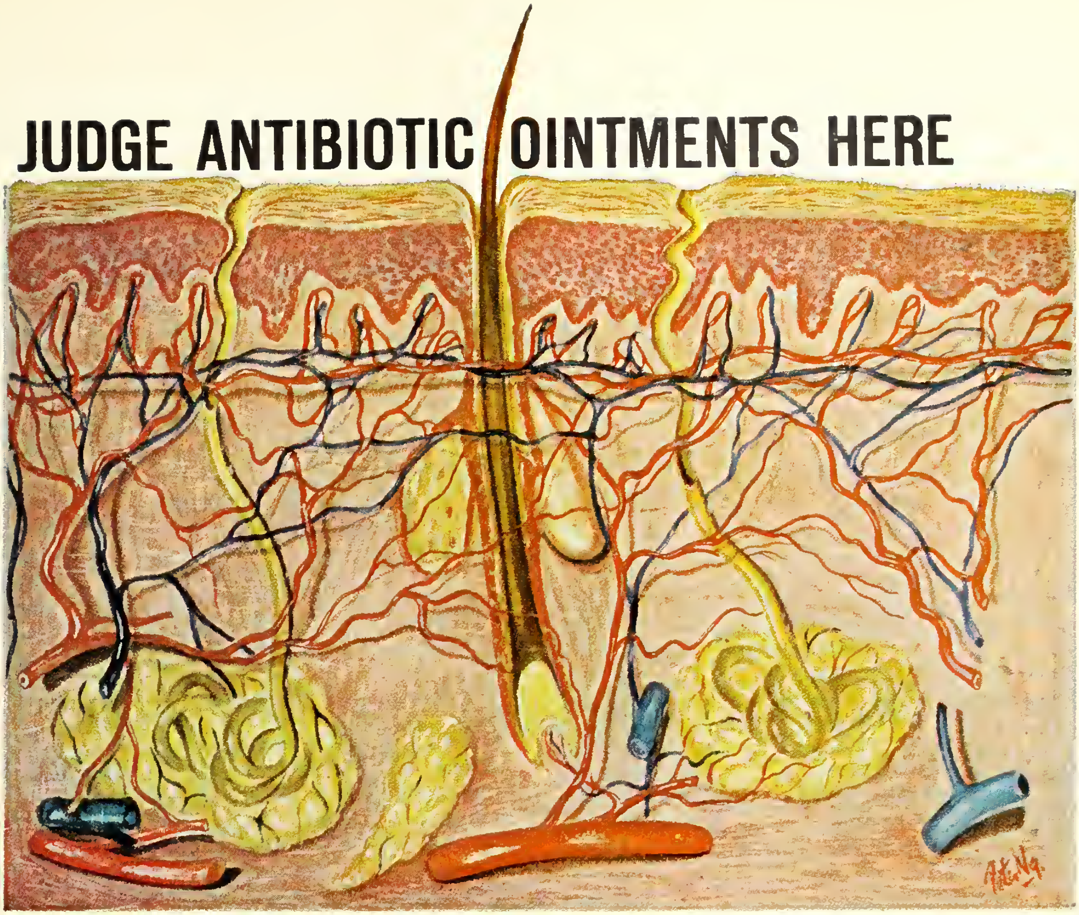

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# *Book Reviews . . .*

## The Growth of Medicine

*compiled and edited by* FREDERICK STENN, M.D., *199 pp., Charles C Thomas Co., Springfield, Ill., 1967, $9.50*

Although the essays in this volume exploring the history of medicine originally were presented to freshman and sophomore students at Northwestern University Medical School, they have both instructive and entertaining value for both the physician and the layman who wish to know something of the development of medicine through the ages. Succinct, well written, and based upon sound scholarship, the chapters range from an exploration of ancient, primitive and Assyrian medicine, through the classical and medieval periods, and to discussions not only of the Renaissance period but also through succeeding centuries. The eighteen and nineteenth centuries are represented by essays devoted to medicine in the first half of the nineteenth century and to the origins of modern surgery from 1850 to 1900.

With the exception of the chapter devoted to Dr. William Osler as the ideal physician, the presentations are sturdy and manifest a good deal of penetrating analysis without clogging the narratives with unnecessary detail. Dr. J. M. Budinger himself translated the Ebers papyrus for his most adept article on the medicine of ancient Egypt. The eighteenth century offered somewhat more to modern medicine than Dr. Lester S. King presents in 10 pages. Yet one cannot do everything in short space. The highlights of the volume are the 3 contributions of Dr. Stenn himself—those concerned with the ancient areas, European medieval medicine, and Renaissance medicine. These are delightful.

It is to be hoped that more students in more medical schools may be exposed to exactly the type of material that Dr. Stenn has collected and published, for, as he writes in the preface, the history of medicine is important in itself and is equally significant in the general story of the growth of man's knowledge.

PHILIP D. JORDAN, PH.D.
*Minneapolis*

## Advances in Enzyme Regulation: Volume 5: Proceeding and Synthesis in Normal and Neoplastic Tissues held at Indiana University School of Medicine, Indianapolis, Indiana, October 3 and 4, 1966

*edited by* GEORGE WEBER, *469 pp., ill., Pergamon Press, Inc., New York, 1967. $20*

This book contains the proceedings of the fifth symposium on regulation of enzyme activity and synthesis in normal and neoplastic tissue. It illustrates vividly C. P. Snow's 2-culture science as applied to medicine, for example, the gap between the practice of medicine and medical science. It is an important and significant book but the papers given are highly technical and have, as of the present, little bearing on bedside medicine. It is not for the medical practitioner but for the research scientist and, at that, limited to the enzymologist.

In 10 sessions, it covers the role of enzyme regulation in metabolism, in different organs, in the kidney, in development, in mammalian and microbial organisms, in gluconeogenesis, in hormone action, in isozymes, and in cancer. The eleventh session is a plenary lecture "The redox state of nicotinamide adenine dinucleotide in the cytoplasm and mitochondria of rat liver" by the grand old man of enzymology, Sir Hans A. Krebs.

There are 22 papers, all given by recognized authorities, and a general discussion is added after the third, sixth, seventh, and eleventh sessions. Each paper and the discussions are amply documented and there is a comprehensive subject and author index. An added feature is a listing in the back of the book of the titles and authors of the papers given at the 4 preceeding symposia.

The book is sturdily and attractively bound, on good paper with an easily read type face. The photographs, line drawings, and tables are all well reproduced.

As mentioned above, this book has limited appeal. It will be of little interest to the medical practitioner and of but theoretical interest to the general researcher—but for the enzymologist it is a must.

DAVID B. SABINE
*Yonkers, N.Y.*

## The Neurologic Examination

*by* RUSSELL N. DE JONG, M.D., *3d ed. 1168 pp., ill., Hoeber Medical Division, Harper &Row, New York, 1967. $29.50*

This is the author's third edition of this comprehensive monograph on the examination of the nervous system. In neurological circles it is regarded as one of the classics in the field. The author is one of the great students and teachers of neurology of this generation.

One will find a comprehensive discussion of the neurological examination. The technique and findings of the examination are discussed in detail and are carefully related to a review of normal neuroanatomy and neurophysiology. The author shows how pathological changes in both morphology and function cause neurological changes and related symptoms. In many ways this book could be called a fairly complete textbook of neurology. Many aspects of neurology are completely discussed stressing the method of examination and neurological findings.

The author has a rather extensive section on history taking and mental and physical examination, emphasizing things that are important to the neurologist. He covers the sensory system, first as to anatomy and physiology, and then points out how it is involved by disease and how the neurological findings develop. The technique of the examination is described in a clear and complete fashion. All of the cranial nerves are included. Some of the discussions of the examination of the various cranial nerves and the clinical significance of the findings are the best I have encountered. The motor system is covered in great detail. Again, one is impressed by the thoroughness of this section. The movement disorders and disorders of the extrapyramidal system are handled in a clear, comprehensive fashion. There are excellent anatomical charts clarifying the normal and pathological physiology. The autonomic nervous system and the peripheral nervous system are covered in a scholarly fashion, again stressing the importance of the neurological examination.

The diagnosis and localization of intracranial disease are very complete. Coma and related conditions are extensively discussed and should be of definite value as a reference for the physician dealing with acute cerebral disorders. Special techniques such as the examination of the cerebrospinal fluid are described.

The author does not comprehensively include techniques such as electroencephalography, electromyography, or neuroradiology. He does make reference to them off and on throughout the book and points out where they should be used and their significance in certain situations. All of these things, of course, could not be taken up in one textbook.

I highly recommend this book for anyone interested in diseases of the nervous system. Without some special orientation or interest in neurological disease, I feel the book might be found too comprehensive and difficult to read. It is not just a brief review of the neurological examination, nor is it restricted to common neurological conditions.

HAROLD H. NORAN, M.D.
*Minneapolis*

## Vascular Complications of Diabetes Mellitus: With Special Emphasis on Microangiopathy of the Eye

*edited by* SAMUEL J. KIMURA, M.D., and WAYNE M. CAYGILL, M.D., *277 pp., ill., C. V. Mosby Co., St. Louis, 1967. $19.75*

This textbook is composed of a group of manuscripts presented at a recent symposium on vascular complications of diabetes. This symposium was sponsored by the department of ophthalmology of the University of California School of Medicine in 1965. The presentations, as well as the discussions following each, were taped, edited, and placed in the text in the order of their presentation. This book is beautifully bound and is printed in large clear type with numerous excellent illustrations.

There are 20 articles presented covering various aspects of complications associated with diabetes, with particular emphasis on retinopathy. In many instances the discussions following an article are as informative as the article itself. As in any book of this type, there is considerable variability in the quality of each article, and by no means is the overall text intended to be complete. The average ophthalmologist in private practice will not find much practical help for the everyday management of his diabetic patients; however, he may develop a better understanding of some of the basic pathology. Many of the papers are fairly technical and would be of interest primarily to those in academic ophthalmology or to physicians with particular interest in diabetes. Some of the manuscripts are interesting in that they point out current directions of thoughts by many of those in the forefront of research in diabetes.

The book is divided into 5 main sections. One of these includes articles on various approaches to anterior pituitary abalation such as stalk sections, cryosurgery, and heavy particle irradiation. A second section includes some beautifully illustrated articles on vascular pathology. Great strides have been made in this aspect of the study of diabetes with the advent of the electron microscope, fluorescein angiography, and improved fundus photography. Another division deals with medical treatment of diabetes with several provocative articles on insulin and dietary management. A fourth section covers general considerations of diabetes and the eye. One section consists entirely of a long paper on oxygen and the growth and development of retinal vessels presented as the Francis I. Proctor Lecture at this symposium.

SIDNEY NERENBERG, M.D.
*Minneapolis*

## Hamilton Bailey's Emergency Surgery

*edited by* T. J. MC NAIR, M.D., *8th ed., 1026 pp., ill., Williams & Wilkins Co., Baltimore, 1967. $32*

For thirty-seven years this textbook on emergency surgery has been of great value to young surgeons. Following the death of the original surgeon-author, T. J. McNair and a group of outstanding colleagues have updated the material to include recent advances in surgical practice.

All areas of the body are covered including sections on the head and face; the eye, ear, nose, and throat; the thorax; abdomen; extremities; genitourinary system; and the central nervous system. Technical procedures are well documented and include helpful hints for detailed management of patients. Perhaps this is the best overall textbook available for immediate reference in an emergency room regarding "how to do it" information. There are fine illustrations of many procedures and the descriptions are written with the customary warmth of British authors. Appropriate use of common idiom and anecdotes makes the material in this book easy to read and remember.

Many fundamental principles of medicine and surgery are basic to effective diagnosis and treatment, and it is unfortunate when current "glamorus subjects" preempt too large a segment of our attention. Hamilton Bailey's text provides basic material so necessary to good surgical practice.

The reviewer recommends this textbook for every emergency room and as a fine resource book for surgical residents. Medical students and interns will find this textbook outstandingly helpful regarding many procedures that are used in elective type of management for surgical patients as well as in emergency situations.

CLAUDE R. HITCHCOCK, M.D.
*Minneapolis*

## Renal Disease

*edited by* D. A. K. BLACK, M.D., *2nd ed., 810 pp., ill., F. A. Davis Co., Philadelphia, 1967. $25*

This monograph on the kidney is a large and comprehensive discussion of virtually all aspects of kidney disease with sections by 33 contributors from the United

(Continued on page 14A)

(Continued from page 13A)

States and Britain. There is a lengthy discussion of the anatomy and physiology of the normal and abnormal kidney. There is a short and well-illustrated section on electron microscopy of the kidney. The remainder of the book is devoted to a presentation of the clinical aspects of diseases of the kidney in relationship to etiology, diagnosis, and treatment. The book is reasonably well illustrated with graphic material and photographs. Rather lengthy references to the medical literature are listed at the end of each chapter. The book is a fairly complete description of all phases of kidney disease and should be a useful reference source for both specialists in kidney disease and nonspecialists. As indicated in the preface to this second edition, the book has been largely rewritten with 17 of the 29 chapters either on new topics or by different authors.

Medical students, practicing physicians, and specialists in kidney disease will find this a useful reference source for most all diseases of the kidney.

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### Modern Trends in Medical Virology 1

*edited by* R. B. HEATH, M.D., *and* A. P. WATERSON, M.D., *231 pp., ill., Appleton-Century-Crofts, New York, 1967. $12.75*

This monograph contains nine reviews on recent work on certain topics in medical virology selected for their importance and significant advances. The topics include viral nucleic acids, myxovirus multiplication, chemotherapy, host defenses, rubella, measles, adenoviral infection associated with intestinal disease, cytomegaloviruses, and immunology of viral tumors. The authors represent a broad section of Western virology.

Each chapter is succinct, well written, and illustrated with good tables and photomicrographs. The list of references at the end of each topic is up-to-date and well selected. The book is nicely produced on good paper and worth the price for medical virologists. The book is not intended as a textbook of virology and it would not be generally useful for the practicing physician or the clinical microbiologist. Several of the chapters would be of interest to pediatricians and students of congenital malformations in man.

WENDALL H. HALL, M.D.
*Minneapolis*

## NEW BOOKS RECEIVED

**The Ultrastructure of the Animal Cell: International Series of Monographs in Pure and Applied Biology, Zoology Division, Volume 37**
by L. T. THREADGOLD, Ph.D., 313 pp., ill., Pergamon Press, Long Island City, N.Y., 1968. $13

**The Evoked Potentials: Proceedings of an International Meeting held in Siena (Italy), June 30-July 2, 1966: Supplement No. 26 to Electroencephalography and Clinical Neurophysiology**
edited by WILLIAM COBB and CRISTOFORO MOROCUTTI, 218 pp., ill., American Elsevier Publishing Company, Inc., New York City, 1968. $22.50

**Fetal Malformations Caused by Amion Rupture During Gestation**
by RICHARD TORPIN, M.D., 165 pp., ill., Charles C Thomas, Springfield, Ill., 1968. $11.50

**The Balkan Nephropathy: Ciba Foundation Study Group No. 30**
edited by G. E. W. WOLSTENHOLME and JULIE KNIGHT, 123 pp., ill., Little, Brown & Co., Boston, 1967. $3.50

**Health of Mankind: Ciba Foundation 100th Symposium**
edited by GORDON WOLSTENHOLME and MAEVE O'CONNOR, 297 pp., ill., Little, Brown & Co., Boston, 1967. $12

**Communication in Science: Documentation and Automation: A Ciba Foundation Volume**
edited by ANTHONY DE REUCK and JULIE KNIGHT, 274 pp., Little, Brown & Co., Boston, 1967. $12.50

**Cell Differentiation: A Ciba Foundation Symposium**
edited by A. V. S. DE REUCK and JULIE KNIGHT, 257 pp., ill., Little, Brown & Co., Boston, 1967. $12

**An Introduction to Histochemical Technique**
by J. D. BANCROFT, 268 pp., ill., Appleton-Century-Crofts, New York, 1968. $11.75

**Hereditary Disorders of Erythrocyte Metabolism: Proceedings of the Symposium held February 13-15, 1967, at the City of Hope Medical Center, Duarte, California**
edited by ERNEST BEUTLER, M.D., 343 pp., ill., Grune & Stratton, New York, 1968. $9

**The Epidemiology of Multiple Sclerosis**
compiled and edited by MILTON ALTER, M.D., and JOHN F. KURTZKE, M.D., 204 pp., ill., Charles C Thomas, Springfield, Ill., 1968. $10.50

**An Outline of Thoracic Surgery for Medical Students**
by JOHN HINES KENNEDY, M.D., 141 pp., ill., Charles C Thomas, Springfield, Ill., 1968. $8.50

**Principles and Practice of Podiatry**
edited by FRANK WEINSTEIN, D.S.C., 508 pp., ill., Lea & Febiger, Philadelphia, 1968. $22.50

**Anticholinergic Drugs and Brain Functions in Animals and Man: Progress in Brain Research, Volume 28**
edited by P. B. BRADLEY and M. FINK, 184 pp., ill., Elsevier Publishing Company, Inc., New York City, 1968. $12.75

**Neuroradiology Workshop Volume III: Non-Neoplastic Intracranial Lesions**
by LEO M. DAVIDOFF, M.D., HAROLD G. JACOBSON, M.D., and HARRY M. ZIMMERMAN, M.D., 577 pp., ill., Grune & Stratton, New York City, 1968. $34.75

**Human Transplantation**
edited by FELIX T. RAPAPORT, M.D., and JEAN DAUSSET, M.D., 728 pp., ill., Grune & Stratton, Inc., New York City, 1968. $38.50

**Perspectives in Leukemia: A Presentation of the Leukemia Society of America, Inc.**
edited by WILLIAM DAMESHEK, M.D., and RAY M. DUTCHER, Ph.D., 302 pp., ill., Grune & Stratton, New York City, 1968. $12.50

**Medical Plans and Health Care: Consumer Participation in Policy Making with a Special Section on Medicare**
by JEROME L. SCHWARTZ, Dr.P.H., 349 pp., ill., Charles C Thomas, Springfield, Ill., 1968. $16.75

**Planning Clinical Experiments**
by KENNETH R. COX, M.B., 312 pp., ill., Charles C Thomas, Springfield, Ill., 1968. $14.75

**How to Interpret Electrocardiograms in Terms of Vectors: A Practical Manual**
by EMANUEL GOLDBERGER, M.D., 187 pp., ill., Charles C Thomas, Springfield, Ill., 1968. $10.50

**Diagnostic Laboratory Hematology**
by GEORGE E. CARTWRIGHT, M.D., 4th ed., 441 pp., ill., Grune & Stratton, New York City, 1968. $10

**Alimentary Tract Roentgenology: Volumes 1 and 2**
edited by ALEXANDER R. MARGULIS, M.D., and H. JOACHIM BURHENNE, M.D., 1203 pp., ill., C. V. Mosby Co., St. Louis, 1967. $65

**Infectious Diseases: Their Evolution and Eradication**
compiled and edited by AIDAN COCKBURN, M.D., 402 pp., ill., Charles C Thomas, Springfield, Ill., 1967. $18.50

**Physical Standards in World War II**
Editor in chief COLONEL ROBERT S. ANDERSON, M.C., U.S.A., Editor for Physical Standards, CHARLES M. WILTSE, Ph.D., 356 pp., ill., Office of the Surgeon General, Department of the Army, Washington, D.C., 1967.

**Exploration of the Abdomen**
by JOHN W. BASSETT, M.D., 109 pp., ill., Charles C Thomas, Springfield, Ill., 1967. $6.75

**Control of the Peripheral Circulation in Man**
by B. F. WHELAN, M.D., 301 pp., ill., Charles C Thomas, Springfield, Ill., 1967. $12.75

**The Allergic Asthmatic**
by IRVIN CAPLIN, M.D., 105 pp., ill., Charles C Thomas, Springfield, Ill., 1967. $4.75

**Growth Regulating Substances for Animal Cells in Culture: Wistar Institute Symposium Monograph 7**
edited by VITTORIO DEFENDI and MICHAEL STOKER, 125 pp., ill., Wistar Institute Press, Philadelphia, 1967. $5

**Heredity, Disease, and Man: Genetics in Medicine**
by ALAN E. H. EMERY, M.D., 247 pp., ill., University of California Press, Berkeley, 1968. $6.95

**Relativity for Psychology: A Causal Law for the Modern Alchemy**
by D. G. GARAN, Ph.D., 338 pp., Philosophical Library, New York City, 1968. $7.95

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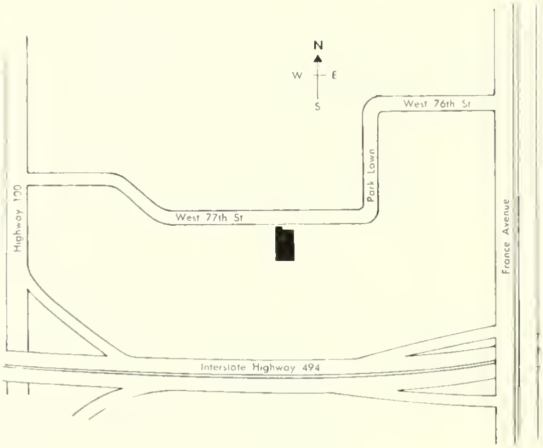

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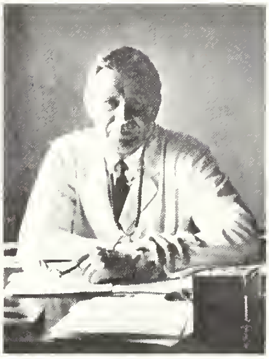

*(Sorry, but the Doctor isn't in.)*

We all missed a bet some 20 or so years ago.

Right then, when the scientific revolution in medicine was really gathering momentum, we should have abandoned the old names "doctor" and "physician."

But we didn't. And so today there's a good deal of misunderstanding between the medical profession and the public. (Opinion surveys show that most people are critical of doctors as a group; while doctors show increasing concern about their "image.") And in a relationship in which confidence and trust are basic to success, that's not good. Could it be that if we didn't confuse today's scientifically-oriented medical practitioner with yesterday's doctor there'd be less complaining? And, more important, less *cause* for complaint?

That old-time doctor we hanker after was comforting, reassuring, unhurried. And with good reason. Comfort and reassurance often were about all he had to offer. As a result, patients came to him only when they were desperately sick. If he sat up with a sick child, it was because he was at wit's end.

Today's doctor has at his command the tools of biochemistry, electronics, nuclear physics. Thanks to pharmaceutical research he can treat — and often cure — virtually every known disease. And because he *can* do so much more, he sees a lot more patients.

This is a change that takes getting used to . . . not only by patients but by physicians. Neither is now quite sure of his role, and friction can result.

Unless we do something about it.

For their part, leaders in medical education are putting increasing emphasis on teaching that is society- and people-oriented. They want to make sure that future physicians will not only master the necessary facts about molecules and microbes, but will keep fully aware of the Mikes and Marys in whom these phenomena take place.

And what can we, as patients, do?

As a start, here are three suggestions:

**Don't make house calls the index of how much your doctor cares.** Hand-holding can be taken care of in the home, but modern treatment often requires the office or even the hospital.

**Welcome referrals.** If your doctor sends you to a specialist — and the specialist to yet another — it's because medicine has become too complex for any one man to master. Be glad that your doctors know the limits of their expertise.

**Follow directions faithfully.** Today's drugs are often as potent as they are specific: what helped Uncle Bill may not help you . . . skipped doses can get you in trouble . . . and so can taking two pills if the doctor said one.

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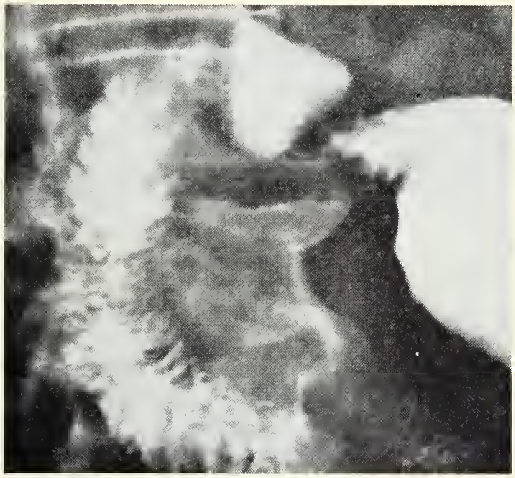

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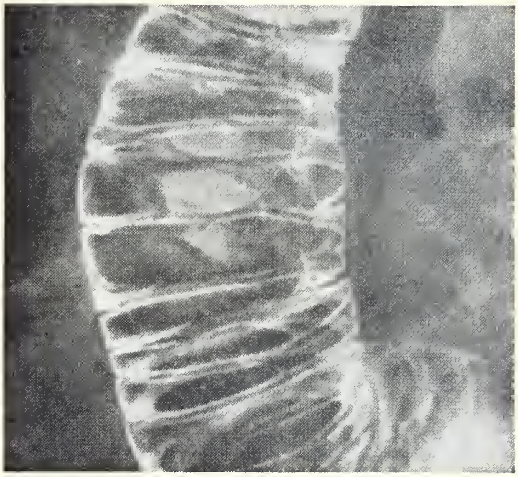

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(1) Bilbao, M. K.; Frische, L. H.; Rösch, J., and Dotter, C. T.: Hypotonic Duodenography, Scientific Exhibit, Radiological Society of North America, Chicago, Nov. 27–Dec. 2, 1966.

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(3) Cf. also, Liotta, D.: Pour le diagnostic des tumeurs du pancréas: la duodénographie hypotonique, Lyon chir. 50:445-460, (May-June) 1955.

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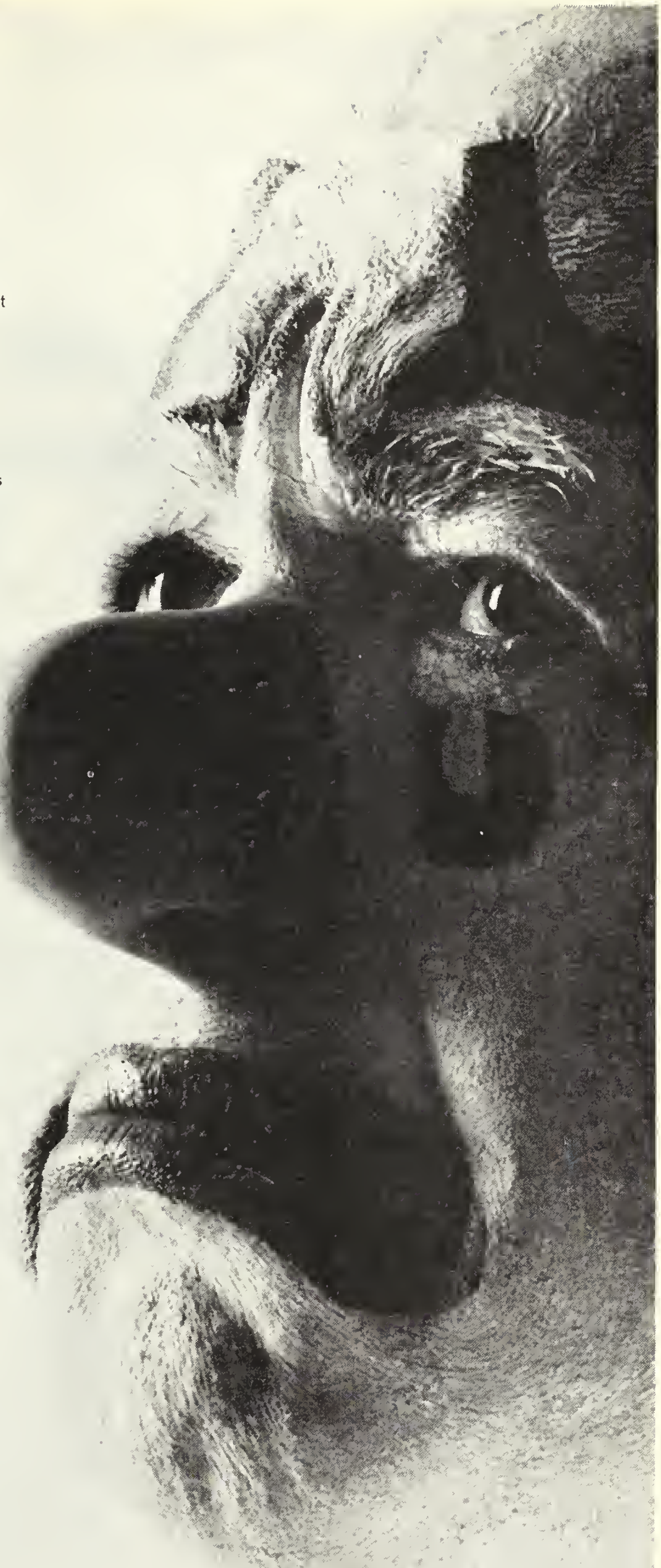

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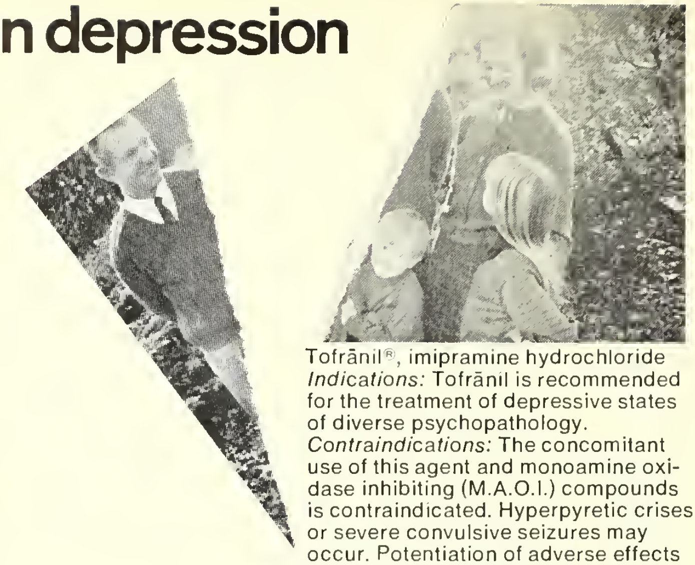

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# Gallstone Hemorrhage and Gallstone Ileus

MICHAEL F. KOSZALKA, M.D.

Fargo

THIS IS A REPORT on two unusual and intriguing complications of cholelithiasis which physicians are apt to encounter perhaps only once or twice in their lifetime. Because of the ever-increasing longevity of our population, these incidents are likely to become more common and, therefore, to assume a role of greater importance to the medical profession.

## CASE REPORTS

*Case 1.* With patience and some prodding, we were able to extract complaints of intermittent nausea, vomiting, and upper abdominal pain unrelated to meals of five months' duration from this 70-year-old man. He also had gas on his stomach frequently brought on by meals that included fatty or fried foods, cucumbers, or onions. A few days before admission, blood appeared in his stools for the first time in his life.

The physical examination revealed a grade 2 systolic murmur at the apex, some upper abdominal tenderness elicited on palpation, and moderate varicosities of the left leg.

The laboratory studies were all normal except for the presence of a mild anemia and occult blood in his stool. A barium enema was unsatisfactory because of incomplete cleansing of the bowel, gastrointestinal series was normal but the gallbladder failed to visualize on two successive examinations, and serial electrocardiograms showed an old posterior myocardial infarction pattern.

During the subsequent two months he developed an acute cholecystitis on 2 occasions that responded to conservative therapy. On Aug. 25, 1960, active bleeding from the gastrointestinal tract manifested itself by both hematemesis and melena, which persisted in spite of medical therapy and repeated blood transfusions. By Aug. 29 the hemoglobin had dropped to 6.4 gm. percent. Another gastrointestinal series failed to uncover any abnormality. Because of the persistence of massive bleeding, surgery was advised notwithstanding the risk. On Aug. 30 an exploratory was performed. An exploratory gastrotomy showed some blood coming from the duodenum. Upon exposure of the gallbladder and the duodenum, which were bound together by adhesions, the bleeding was found to be coming from an eroded cystic artery lying next to a portion of duodenum with compression necrosis from a gallstone within a chronically inflamed gallbladder. The bleeding was controlled with silk sutures with considerable difficulty because of the anatomical distortion and chronic inflammatory reaction. The duodenal wall was repaired and the gastrotomy closed, the gallstones were removed, and the gallbladder was drained. Seventeen pints of blood were required to replace the estimated blood loss during his preoperative and operative periods. The patient's postoperative course was uneventful except for 2 episodes of paroxysmal atrial tachycardia brought under control by digitalis. He was discharged Sept. 21, 1960.

He returned six months later because of weakness, weight loss, and an anemia due to a carcinoma of the cecum. A hemicolectomy was done on March 21, 1961. Metastatic carcinoma was found in several of the regional mesenteric lymph nodes. The carcinoma of the colon might have been detected earlier had the radiologist's report of an unsatisfactory routine barium enema been repeated or followed to a satisfactory conclusion even though the clinician's attention was directed elsewhere at that time. Death came as a result of generalized carcinomatous metastases on Feb. 3, 1963.

The localization of the site of massive gastrointestinal hemorrhage is a constant challenge to the clinician. The biliary tract is rarely considered when the cause of such bleeding is being determined. For this reason gallstones as an unusual cause of gastrointestinal hemorrhage is presented. Only 8 reports of this kind have appeared in the literature.[1,2] Almost all of the patients in this category had previous episodes of gallbladder disease or colic before the hemorrhage. Absence of intolerance to fatty food was of no diagnostic import but the gallbladder failed to visualize in most cases. In 1 of the patients obstructive jaundice was due to clotted blood within the common duct.[2]

*Case 2.* This 75-year-old man was admitted on May 2, 1963, with presenting complaints of abdominal pain

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MICHAEL F. KOSZALKA *is chief, Medical Service, Veterans Administration Center, Fargo.*

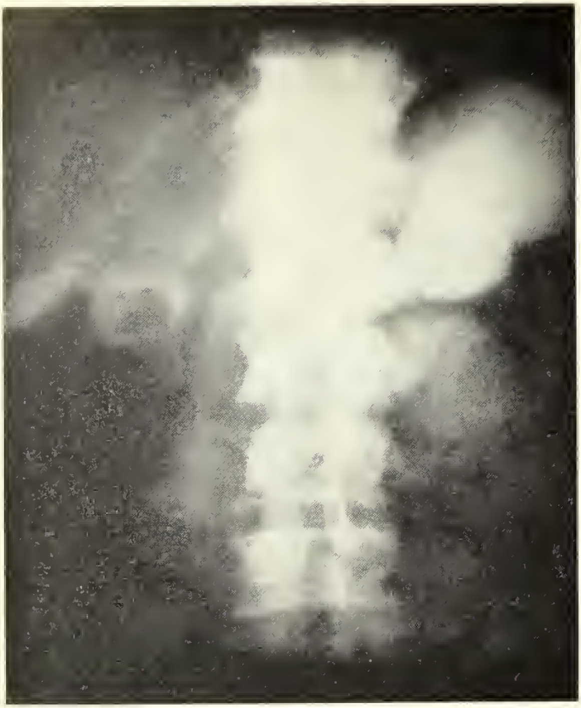

Fig. 1. Gastrografin GI series

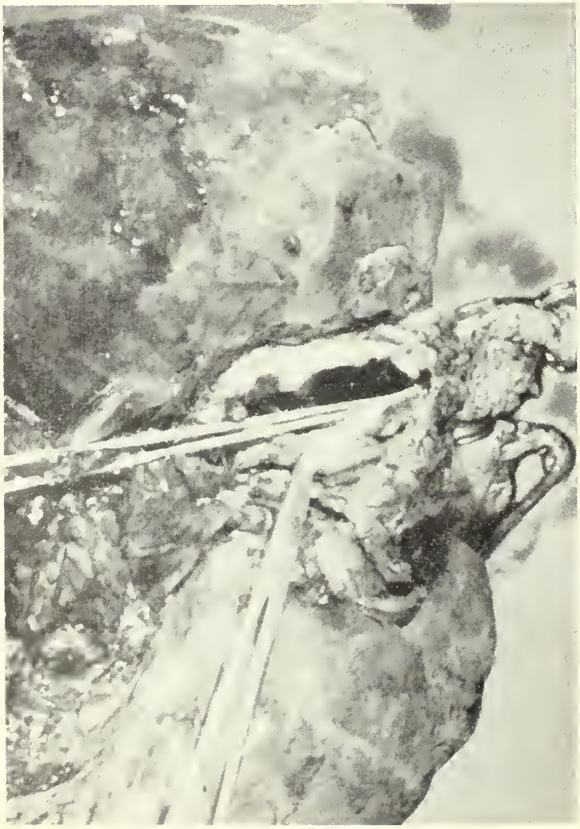

Fig. 2. Cholecystoduodenal fistula

in the left lower quadrant and persistent vomiting of one week's duration. At the onset, the pain started in the right upper quadrant, was more severe, and radiated into his back. After one or two days, the pain shifted down to the lower left side of his abdomen.

He had been previously treated for a myocardial infarction in 1955, myocardial failure in 1959, and gallbladder disease in 1961, at which time the gallbladder did not visualize on 2 examinations. The oval opacity in the right upper abdomen was thought to be either a large gallbladder calculus or a calcified gallbladder wall. Because of his good response to conservative therapy in 1961 and his poor surgical risk status, surgery was deferred.

The pertinent physical findings were atrial fibrillation and a grade 2 blowing systolic apical murmur. There was some abdominal tenderness on palpation in the left lower quadrant.

An electrocardiogram confirmed the presence of atrial fibrillation and residuals of an old posterior infarction. The white blood cell count was 16,000 per cubic millimeter on May 2. It rose to 20,350 per cubic millimeter with 88% polys on May 5. Daily electrolyte determinations remained within normal limits. Gastric suction and replacement of fluids and electrolytes were continued until further studies, as illustrated below, conclusively showed that he had a high intestinal obstruction due to a gallstone, necessitating surgical intervention.

A review of the films showed some distended loops of small bowel in the upper abdomen. The large oval opacity had disappeared. In its place was a bubble of gas thought to be either in the colon or gallbladder. A swallow of gastrografin then demonstrated a normal stomach, a fistulous tract between the gallbladder and duodenum, a contracted and deformed gallbladder, and a dilated proximal small bowel (Fig. 1).

The patient was redigitalized and a laparotomy was performed on May 6. On exploration, a gallstone measuring 2.5 cm. × 4 cm. in size was found obstructing the small bowel two feet distal to the ligament of Treitz. The gallstone was removed through a simple enterotomy; no other stones were found. The duodenum was densely adherent to the gallbladder. No attempt was made to remove the gallbladder or close the fistula at this critical time, especially since fistulas usually close spontaneously or cause no further trouble. His early postoperative course was normal. On the fourth postoperative day he was found dead in bed.

Autopsy showed the presence of an old posterior infarction, thrombosis of the left circumflex artery, and marked narrowing of the left descending coronary artery in a heart that was hypertrophied and weighed 710 gm. The duodenum, 5 cm. distal to the pylorus, was adherent to the fundus of a thickened and shriveled gallbladder by fibrous adhesions, and there was a fistulous tract, 1.5 cm. in diameter, between the gallbladder and the duodenum (Fig. 2).

Gallstone ileus, an uncommon but not rare condition, is characteristically a disease of the aged usually afflicted with 1 or more coexisting illnesses. It is more frequent in the female. Its incidence, as determined by different means, is 1 in every 30,000 operations—0.4% of all patients with gallbladder disease or gallstones and 3% of all cases of intestinal obstruction.

The sequence of events is chronic inflammatory disease of the gallbladder productive of 1 or more stones. Occlusion of the cystic duct by a stone results in an acute attack leading to adherence of the gallbladder to the duodenum, colon, or stomach. Pressure erosion by the stone leads to formation of a cholecystenteric fistula with passage of the stone into the intestinal tract. If the stone is 2.5 to 3 cm. or less in size, it may be regurgitated into the stomach and vomited or it may be passed out through the rectum. Larger stones will produce obstruction occasionally in jejunum, usually in the terminal ileum.

Signs and symptoms are varied but the more common pattern is right upper quadrant colicky pain shifting into the lower abdomen, vomiting, distention, dehydration, and leukocytosis. Acute cholecystitis, pancreatitis, and diverticulitis may be simulated. If the site of obstruction is high, there will be little or no abdominal distention and the disease may go on unrecognized.

In 1941 Rigler and associates[3] pointed out the diagnostic importance of X-ray findings in gallstone ileus that are worthy of repetition and review at this time: (1) air shadow in biliary tree produced by passage of air through cholecystenteric fistula, (2) dilated loops of small bowel with advancement of the obstructive level, and (3) demonstration of an opaque stone either in small bowel or change in location. Further, a thin barium swallow demonstrating a fistula may provide conclusive evidence as it did in our case.

The prognosis of gallstone ileus until recent years was extremely poor. With earlier recognition and surgical treatment as well as better understanding of fluid and electrolyte balance and improved anesthesia technique, the mortality rate has been lowered from 30 to 70% before 1950 down to 0 to 19% since 1950.[4] Where the risk of surgery appears to be too great, dislodgement of the impacted stone may succeed by flooding the distal ileum with a lubricated barium enema.[5]

## SUMMARY

Two different and unusual complications of cholelithiasis have been presented with a brief review of some of the clinical, diagnostic, prognostic, and therapeutic aspects.

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# Reconstruction of the Mandible with a Simple Prosthesis at the Time of Radical Surgery for Oral Carcinoma

## Report of Thirteen Cases

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In patients with a large anterior oral carcinoma, wide resection of the anterior mandible is frequently required for effective operative management. There is an understandable tendency to compromise the margins of resection to avoid a cosmetic and functional disaster. In the last 54 carcinomas of the floor of the mouth seen at this hospital, 19% of them extended across the midline. Over two-thirds of these patients were technically resectable for cure but required resection of the anterior mandible. It is the anterior oral lesion which is more amenable to a wide primary resection with en bloc node dissection. Adequate resections have been compromised by an understandable reluctance of the surgeon to treat the tumor and leave the functional problems and the "Andy Gump" cosmetic deformity. The unsupported tongue and anterior mouth structures make swallowing difficult and management of saliva impossible. The mouth hangs open and, over a period of time, the deformity is accentuated by the divided mandible fragments being pulled medially by the unopposed pterygoid muscles. Late reconstruction is hampered by malposition and loss of function in the angulated temporomandibular joint.

### METHODS AND MATERIALS

A number of methods have been proposed through the years to replace the mandible. In the experience at this hospital, solid metallic prostheses have been unsatisfactory and erode through the skin or oral mucosa. The initial placement of bone and bone-plate combinations, without extensive intra-oral reconstruction, with full-thickness pedicle flaps have all failed.

The more pessimistic head and neck surgeons follow a policy of making no initial reconstructive effort. They wait one to two years to see if their patient is in the "fortunate" 25 to 35% group without recurrence. Then the long multiple stage reconstruction is started. This condemns the patient with recurrence to live out his life as a drooling social pariah, while the "lucky" patient has two years of misery before reconstruction. These considerations prompted an attempt to devise some prosthesis which could restore the supporting functions of the anterior mandible.

According to set criteria, the material should be: [1] firmly supportive, [2] easily fabricated, [3] well tolerated by the tissue, and [4] capable of resisting infection in an operative field seeded with oral bacteria.

*The prosthesis.* Silastic seemed to be the ideal basic material for a prosthesis. It had been noted that the silastic portion of a Schribner shunt would remain through the skin for as long as a year without any significant infection or surrounding reaction. It had been noted that, at the time of cardiac pacemaker replacement, there was a firm vascularized connective tissue capsule formed around the units. The lack of surrounding inflammation minimized the "drift" of this

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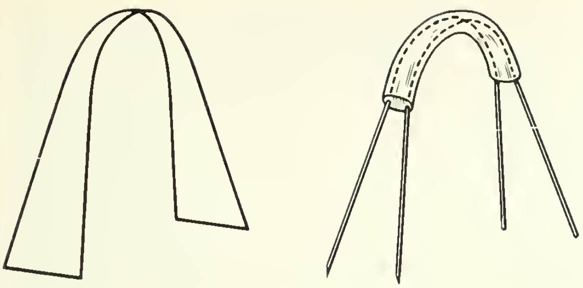

Fig. 1. This illustrates the stable flared-base arch concept of achieving firm fixation.

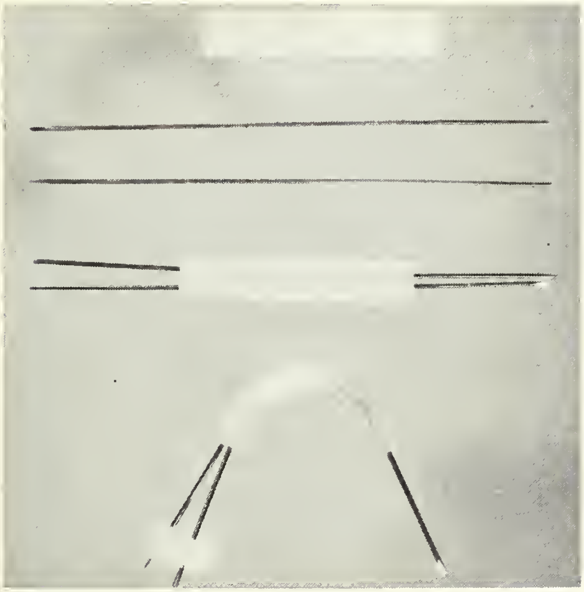

Fig. 2. The silastic bar and Kirschner wire struts are shown in the upper portion of the photo. The wires are drilled through the bar as shown in the center of the figure. Finally, the silastic is trimmed and the wires are bent to the desired curvature. In the lowest part of the photo, the one side is shown held in a flared position by a block of silastic.

material through the tissues. The problem was to achieve some firm support and means of attaching the silastic to the mandible fragments. The initial attempts were successful and the prosthesis which was used was based on an engineering design similar to the now-familiar St. Louis arch. This is fundamentally a flared double arch which incorporates the stability of a triangle and an arch (Fig. 1). The prosthesis is fabricated at the time of surgery by drilling 0.062 Kirschner wires through a hard silastic bar measuring 2 × 2 × 12 cm. The bar is made of ample size so that it can be shaped later. This step is illustrated in Figure 2. As can be seen, after placement of the wires through the prosthesis, it is shaped to a rounded bar about ¾ cm. thick by 1.2 cm. wide. It is then bent to the appropriate curve. The unwanted length of silastic can be easily cut from the wires and the ends are shaped to fit the mandible fragment. In replacing the anterior mandible, the holes for the wire are drilled slightly larger than the wires, and the direction of the drill holes is such as to give a good double flare. After insertion into the mandible, the wires are bent back over and turned in (Fig. 3). The prosthesis can be used to replace a lateral segment of the mandible, as shown in Figure 4. The most important part in using this prosthesis is that the intra-oral closure consists of at least three good layers. Also, it should be obvious that, if large resections of the anterior tongue are done, it will be necessary to make the mandibular prosthesis shorter than the patient's own mandible in order to bring enough tongue forward to get good closure. The anterior buccal sulcus is not reformed but, instead, the tongue is lifted up slightly in front so that the saliva drains posteriorly from all parts of the mouth. Upper teeth impinging on the

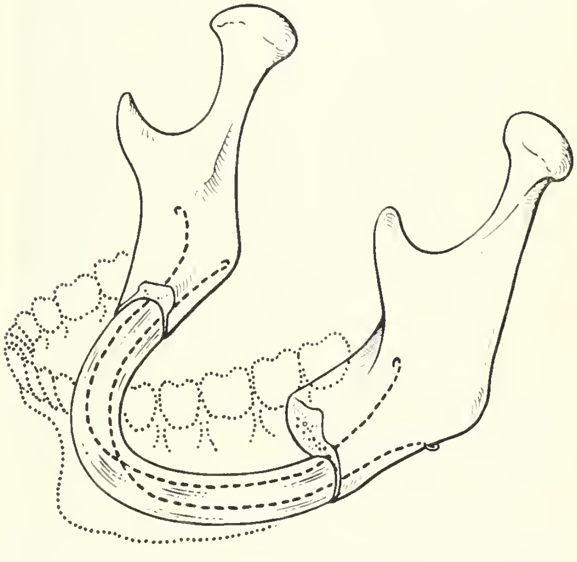

Fig. 3. This drawing shows the placement of the prosthesis. To obtain good closure, it usually is necessary to make the mandible prosthesis somewhat shorter.

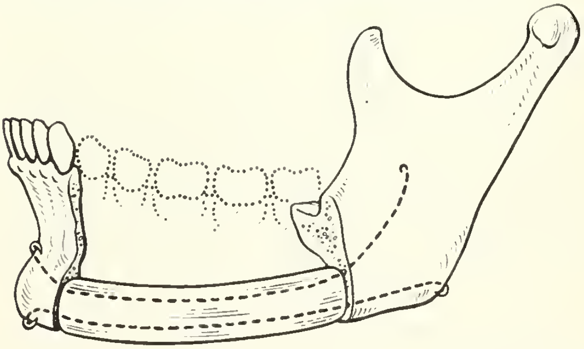

Fig. 4. This illustrates the same type of prosthesis being used to replace lateral mandible segments.

junction between mandible and prosthesis should be removed to prevent later erosion of the prosthesis into the mouth.

### RESULTS

The initial purpose of this prosthesis was to give a more dependable support of the mouth structures until such time as definitive reconstruction could be done. From the standpoint of giving long-term support, the prostheses have been pleasantly successful. Figure 5A and B shows one of our first two patients. Figure 6A and B shows one of the more recent patients.

To date, there has been replacement of portions of the mandible in 13 patients, the entire anterior mandible in 8 patients, and sizable lateral mandible segments in 5 patients (Tables 1 and 2). The term "satisfactory" means that the prosthesis is in place and that the patient is free of discomfort and able to swallow and prevent drooling. There was one early and one late failure in the anterior mandible group. The patient with the early failure had the most extensive resection of all of the patients and the mandible fragments and amount of tongue remaining were not adequate for fixation of the wires and coverage of the prosthesis. In the late failure, two remaining upper molars caused erosion as the pa-

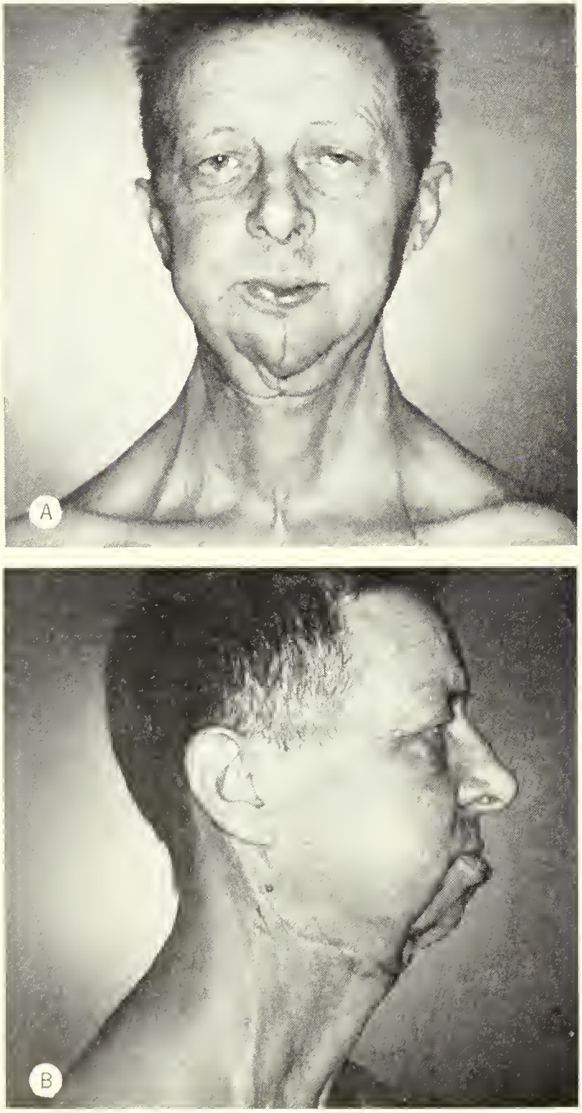

Fig. 5A and B. This patient had a bilateral mandibulectomy, bilateral neck dissection, a large anterior glossectomy, and resection of the hyoid bone. Although the mandible has been considerably shortened, the patient is able to talk, swallow, and manage his oral secretions.

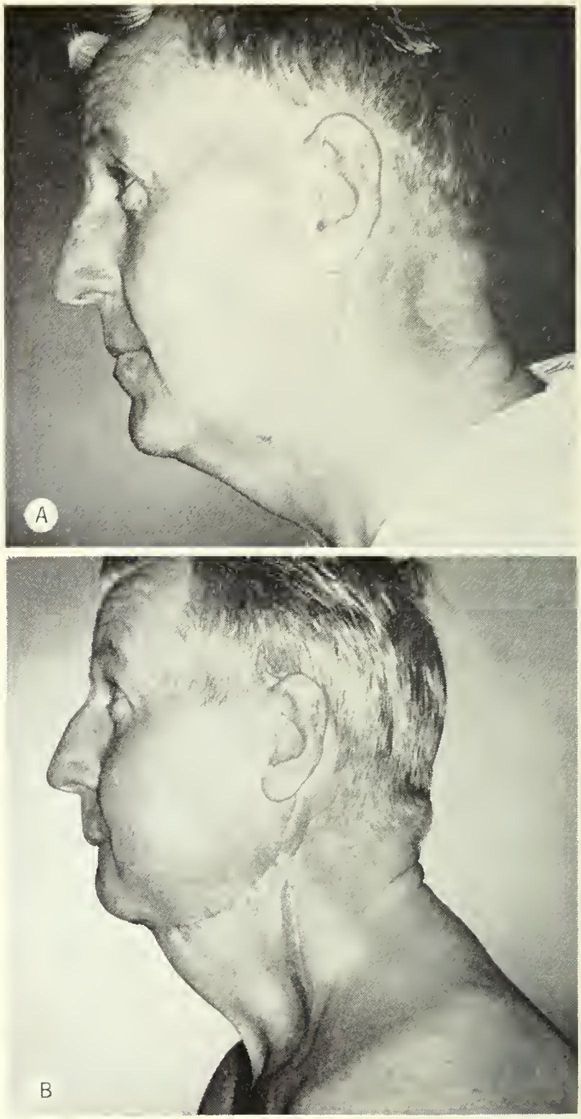

Fig. 6. One of the more satisfactory cosmetic results shown [A] before surgery and [B] one year after surgery. This patient had a bilateral mandibulectomy, bilateral neck dissection, and an anterior glossectomy for a large carcinoma of the floor of the mouth.

TABLE 1

PATIENTS WITH REPLACEMENT OF ENTIRE ANTERIOR MANDIBLE

| *Patient* | *Site of cancerous lesion* | *Operation* | *Date* | *Result* |
|---|---|---|---|---|
| 1 | Floor of the mouth with bilateral metastases | Anterior glossectomy, bilateral mandibulectomy, bilateral neck dissection | 5/14/65 | Satisfactory |
| 2 | Tongue and floor of the mouth | Anterior glossectomy, bilateral mandibulectomy, bilateral neck dissection | 7/20/65 | Satisfactory |
| 3 | Lip, invading mandible with metastases | "Martin" resection of lower lip, bilateral mandibulectomy, right neck dissection, left suprahyoid dissection | 2/11/66 | Satisfactory |
| 4 | Floor of the mouth | Anterior glossectomy, bilateral mandibulectomy, left neck dissection, right suprahyoid dissection | 3/ 1/66 | Satisfactory |
| 5 | Floor of the mouth | Anterior glossectomy, bilateral mandibulectomy, bilateral neck dissection | 5/11/66 | Satisfactory |
| 6 | Floor of the mouth | Bilateral mandibulectomy, left neck dissection, right suprahyoid dissection | 7/12/66 | Removed at 3 months |
| 7 | Tongue and floor of the mouth | Anterior glossectomy, bilateral mandibulectomy, bilateral neck dissection | 8/ 9/66 | Satisfactory |
| 8 | Entire anterior tongue | Near total glossectomy, bilateral mandibulectomy, bilateral neck dissection | 8/30/66 | Removed at 4 weeks; died of widespread recurrence at 3 months |

TABLE 2

PATIENTS WITH REPLACEMENT OF LATERAL MANDIBLE SEGMENT

| *Patient* | *Site of cancerous lesion* | *Operation* | *Date* | *Result* |
|---|---|---|---|---|
| 9 | Floor of the mouth | Left hemiglossectomy, hemimandibulectomy and neck dissection | 4/ 6/65 | Satisfactory |
| 10 | Metastatic cancer of the lip, invading mandible | Left hemimandibulectomy and neck dissection | 7/13/65 | Satisfactory |
| 11 | Tongue and floor of the mouth | Left hemiglossectomy, hemimandibulectomy and neck dissection | 8/ 3/65 | Satisfactory |
| 12 | Tongue and floor of the mouth | Right hemiglossectomy, hemimandibulectomy and neck dissection | 10/22/65 | Removed at 3 months; left-sided recurrence requiring neck dissection |
| 13 | Tongue | Left hemiglossectomy, hemimandibulectomy and neck dissection | 1/21/66 | Satisfactory |

tient attempted chewing against the prosthesis. Intra-oral removal of the prosthesis is accomplished by cutting the silastic off of the wires and removing them. The one lateral segment that failed eroded at the posterior junction, again following attempts to chew on the prosthesis.

The important thing is that there is a high success rate—75% or more—with a simple measure. If the prosthesis remains in place for two months or more, there is some supporting fibrosis to give moderate support to the mouth structures even though the prosthesis must be removed. The fact that several prostheses have been in place for over two years suggests that this prosthesis may be entirely satisfactory for a definitive mandible replacement and not just as a temporary measure for the two to three years of tumor follow-up. At the present time, we are content with the result that most patients can have a functional mouth with a partial cosmetic replacement. With the exception of Patient 8, all the patients are at present free of tumor.

## SUMMARY

The paper describes a simple mandibular prosthesis that has been used in extensive resections of the mandible. It is cosmetically adequate and supports the tongue and lower facial structures, allowing swallowing and control of saliva. The mandible function and spacing are preserved during the period of tumor follow-up. If necessary, it is easily fabricated at the time of surgery and can be placed in the potentially contamined operative field.

# Acute and Chronic Copper Poisoning in the Rat

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RESISTANCE TO HIGH COPPER loads appears to be present in certain rats and in their offspring and may be related to their ability to tie plasma copper into the ceruloplasmin molecule since selected animals markedly increase their plasma ceruloplasmin levels during copper loading while nonselected animals do not. Copper loading can act for a long enough time in some of the selected animals to destroy the myenteric plexuses and lead to a type of megacolon. Injecting testosterone into the copper-loaded animals results in death within two months and increases the urine copper even more than copper injections alone. Cortisone acetate and estrone injections do not harm the copper-loaded rat and may even protect it.

The rat has been injected with copper in the hope of developing a model of Wilson's disease.[1,2] This hope has not been realized possibly because the animal has a normal amount of ceruloplasmin, the plasma protein which carries copper in its molecule.[3] However, the animal is quite tolerant to copper and is a good subject for studies on copper loading.

This work reports three experiments done on copper-loaded rats.

The first set a base line by determining the reaction of rats taken at random to copper injection. The second explored copper resistance and the mechanisms involved, and the third examined the effect of hormone injections on animals sustaining large copper loads. This was suggested first by the known effect of testosterone,[4] estrogen,[5] and cortisone 6 on the copper metabolism of certain species and second by the peculiar clinical course of Wilson's disease. Patients with this condition store very large quantities of copper but remain well until about puberty, when some unknown mechanism triggers the overt signs and symptoms.[7]

### METHOD

White rats of the Wistar strain were used and maintained on Purina Lab Chow and water exclusively. Five grams of copper sulfate pentahydrate were dissolved in 1,000 ml. of distilled water to give an elemental copper solution of 1.3 mg. per milliliter. This was administered subcutaneously in either flank. Ceruloplasmin activity was measured by the method of Houchin, who found excellent correlation between the ceruloplasmin present and the paraphenylenediamine activity.[8] Ceruloplasmin oxidase activity is converted to ceruloplasmin concentration by the following formula:

$$\frac{\text{milligrams of ceruloplasmin}}{\text{100 milliliters plasma}} = 157 \times \text{optical density.}$$

One hundred fifty-seven is the constant of proportion we have determined for the rat. All bloods were drawn per cardiac puncture under intraperitoneal pentobarbital anesthesia (30 mg. per kilogram). Tissue, urine, fecal, and plasma copper determinations were done by the wet ash method.[9] Tissue specimens were obtained at autopsy, weighed immediately, analyzed for copper, and, in some instances, interpreted histologically. Tissue copper concentration is reported in terms of wet weight. Urine samples were collected by holding the animals in standard metabolism cages for twenty-four hours with water but no food. To lessen the chance of contamination

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TABLE 1

TISSUE COPPER VALUES FROM COPPER-INJECTED AND CONTROL ANIMALS

| | *No. of determinations* | *Total copper dose (mg.)* | *Liver (μg./gm.)* | *Kidney (μg./gm.)* | *Heart (μg./gm.)* |
|---|---|---|---|---|---|
| Unselected animals | 16 | 17.7<br>(12.5-19) | 1225.0<br>(572-2182) | 117.2<br>(45.4-219) | |
| Selected animals | 8 | 137.0 | 955.0<br>(282-1543) | 107.2<br>(30.7-313) | 19.9<br>(6.1-46.0) |
| Animals not receiving copper | 28 | | 4.68 ± 1.62 | 4.80 ± 1.80 | 5.24 ± 0.33 |

by copper, the injections were withheld for twenty-four hours before placing the animals in the cages, and no animal with an open ulcer at the copper site was used. Feces samples were collected and dried at room temperature for a week before analysis. The control tissue copper values (Table 1) were taken from 28 animals not given copper but housed and fed under the same conditions. All data are handled as means and extremes or means and standard deviations. The test of significance used is the student "t" test.

## RESULTS

*Section 1. Unselected rats.* Seventy-six animals were used, 35 males and 41 females, and at age 3 months plasma ceruloplasmin was determined and each given 0.26 mg. copper daily. Fourteen days later, blood was again taken for ceruloplasmin determinations. Repeat ceruloplasmin as well as hemoglobin and hematocrit values were determined on the surviving 24 rats sixty days later (Table 2). Plasma ceruloplasmin values were significantly increased after 3.64 mg. of copper ($P < .01$) but did not increase further after 15.6 mg. of copper (Table 3), while the tissue copper concentration was profoundly altered (Table 1). Hemoglobin, hematocrit, and red cell values, compared to those from 11 control rats of the same age, are obviously decreased in the copper-injected animals. Mean survival time was sixty-seven days and autopsies were done after spontaneous death; therefore, the total injected copper in these animals varies.

These animals showed cachexia, ulceration, rounded liver edge, and perihepatic adhesions. They developed diarrhea, became sluggish, failed to clean themselves, and voided dark brown urine. The ulcerations frequently eroded into the peritoneum with secondary bowel fistulae. Dark, malodorous fluid was present in the peritoneum, which was usually stained greenish black. Histologically, the picture of acute hepatic and renal toxicity with cloudy swelling, necrosis, renal casts, and so forth was seen.

*Section 2. Selected animals.* Five animals from the above experiment survived longer than eighty days. Feeling this represented unusual natural resistance to copper, the injections were stopped. The animals were bred and their offspring used for this and the succeeding section.

Thirty-seven animals, 20 females and 17 males, were begun on 0.26 mg. of copper daily at age 30 days. A month later it was increased to 0.65 mg. daily and thus continued until death or autopsy. Autopsy was done at eight and one-half months and animals dying prior to this were discarded.

Plasma ceruloplasmin was measured at age 3 months and again just before autopsy. All 37 animals were alive at age 3 months; by autopsy, 16 remained. Ceruloplasmin values increased significantly between these determinations ($P < .01$) (Table 3). Red cell copper at autopsy was 195 ± 60 μg per 100 ml. compared to 95 ± 15 for noncopper rats (P .01). Samples of liver, kidney, heart, and quadriceps muscle from 8 of these were taken for copper analysis (Table 1). There was no essential difference in the muscle copper concentration (5.1[3.2-6.9] μg. per gram compared to the controls [3.43 ± 1.16 μg. per

TABLE 2

ANEMIA SECONDARY TO 15.6 MG. OF COPPER

| | *No. of animals* | *HCT%* | *RBC per $mm^3$* | *Hb-g* |
|---|---|---|---|---|
| Copper | 24 | 32.4<br>(15-40) | 3,991,000<br>(790,000-5,420,000) | 10.0<br>(3.5-13.8) |
| Control | 11 | 45.4<br>(41-50) | 6,895,000<br>(6,500,000-7,770,000) | 14.5<br>(12.5-16.4) |

TABLE 3

BLOOD COPPER AND PLASMA CERULOPLASMIN VALUES FROM SELECTED AND NONSELECTED RATS

| | *Nonselected animals* | *Selected animals* |
|---|---|---|
| Before copper ceruloplasmin (mg./100 ml.) | 36.0 ± 11.8 | |
| After 3.64 mg. copper ceruloplasmin (mg./100 ml.) | 56.1 ± 8.6 | |
| After 15.6 mg. copper ceruloplasmin (mg./100 ml.) | 53.8 ± 12.3 | |
| After 27.3 mg. copper ceruloplasmin (mg./100 ml.) | | 54.3 ± 8.2 |
| After 137.0 mg. copper ceruloplasmin (mg./100 ml.) | | 72.2 ± 8.4 |

gram]). The selected and nonselected animals show essentially the same increases in organ copper (Table 1).

Six litters of babies were born to these animals while receiving copper. Copper analysis was done on the liver, kidneys, brain, and heart at birth. Only the liver showed a copper increase compared with babies born to rats not receiving copper ($P < .01$) (Table 4).

At autopsy, all 16 animals had densely adherent livers with rounded edges and dense fibrous scars on the flanks, a few contracting to immobilize the hind legs. Nutrition varied from good to extremely deficient with profound wasting of both lean body mass and fat. The brains, thymus glands, hearts, lungs, and ovaries were essentially normal. The liver color varied from brown to gray or even green. Perihepatic adhesions involved the right kidney in 4 cases resulting in hydronephrosis and renal destruction. The adrenal glands were generally hypertrophied with well-preserved architecture. The male genitalia was normal except in 4 animals which had atrophy of the seminal vesicles, prostate, and testes.

TABLE 4

LIVER COPPER CONCENTRATION FROM NEWBORN RATS

| | *No. of animals* | *Liver copper (μg./gm.)* |
|---|---|---|
| Copper injection | 15 | 39.4 ± 10.0 |
| Normal rats | 78 | 22.2 ± 5.0 |

At five months, 6 animals were noted to have progressive abdominal distension secondary to enlargement of the terminal ileum, cecum, appendix, and ascending colon, most marked at the cecum where a large plug of foul-smelling green material was found. More proximal areas of the bowel were successively less distended (Figs. 1 and 2).

Histological analysis showed pronounced but nonspecific hepatic pathology. A hepatitis was present with necrosis of the liver cells, formation of hyalin bodies, and patchy lymphocytic infiltrate. Pigment was deposited within the Kupfer cells proper. This was copper but gave an appearance similar to cytosiderosis.

Sections of the bowel from the appendix and cecum showed virtual absence of Meissner's and Auerbach's plexuses and patchy serosal infiltrate. The remaining ganglion cells showed marked vacuolar degeneration. This picture was felt to

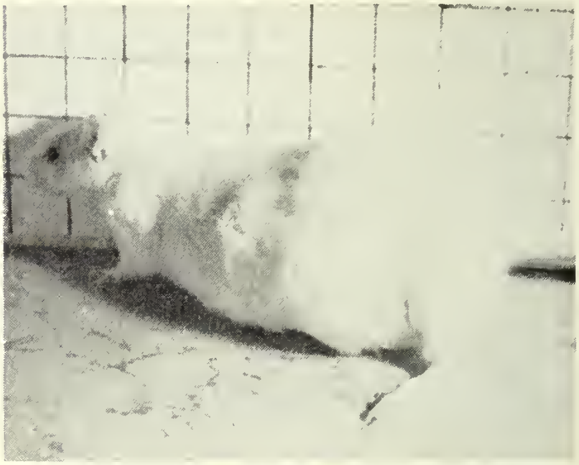

Fig. 1. This rat had received continuous copper injections for seven months and shows a greatly distended abdomen pushing the hind legs out to the side. It appears fat but is actually wasted and the distension is due to enlargement of the bowel.

Fig. 2. Upon opening the abdomen of the animal in Figure 1, the cecum, ascending colon, appendix, and terminal ileum are seen to be grossly distended and plugged with undigested food. Microscopically the myenteric plexuses are destroyed in the involved areas.

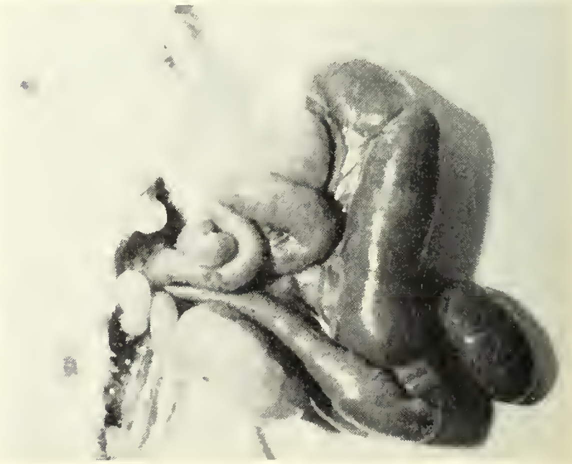

TABLE 5

PLASMA COPPER AND CERULOPLASMIN VALUES FROM ANIMALS RECEIVING HORMONE SUPPLEMENT

|  | *No. of animals* | *Plasma copper ($\mu$g./100 ml.)* Age, 4.5 months | *Ceruloplasmin (mg./100 ml.)* Age, 4.5 months | *Plasma copper ($\mu$g./100 ml.)* Age, 6.5 months | *Ceruloplasmin (mg./100 ml.)* Age, 6.5 months |
|---|---|---|---|---|---|
| Group 1<br>Copper only | 15 | 322<br>(228-475) | 65.9<br>(59.9-76.6) | 316<br>(204-478) | 63.1<br>(32.8-84.0) |
| Group 2<br>Copper + TCP | 9 | 291<br>(250-400) | 65.1<br>(56.6-74.0) | 329<br>(296-340) | 55.6<br>(31.7-71.0) |
| Group 3<br>Copper + cortisone | 8 | 338<br>(278-433) | 62.3<br>(56.6-70.3) | 347<br>(305-405) | 61.3<br>(52.3-68.9) |
| Group 4<br>Copper + estrone | 3 |  |  | 234<br>(167-271) | 41.4<br>(34.8-49.3) |
| Group 5<br>TCP + copper | 14 | 207<br>(166-233) | 34.6<br>(27.1-41.7) | 224<br>(182-273) | 33.7<br>(18.0-49.3) |

be compatible with acquired megacolon such as Chaga's disease.

*Section 3. Hormone injection studies.* Three hormones were used: testosterone (given as testosterone cyclopentylpropionate, TCP), corticosterone (cortisone acetate was substituted which will produce reliable hyperadrenocortinism in the rat[10]) and estrone.

The animals were divided into 5 groups (Table 5). The first 4 were started on 0.26 mg. of copper per day at age 2.5 months and increased to 0.65 mg. at age 3.5 months. At age 4.5 months group 2 received TCP, 20 mg. in oil, 3 times per week; group 3, cortisone acetate, 2.5 mg. in water daily; and group 4, estrone, 0.2 mg. in oil 3 times per week, subcutaneously in a site other than the copper injection. Group 1 (control group) received only copper while group 5 was begun on TCP in the same dose as group 2 at age 2.5 months and on copper, 0.65 mg. per day, at age 5 months. All animals, except those receiving estrone, were sacrificed at age 6.5 months. The estrone group started with 6 rats but 3 died and the remaining 3 were allowed to live for eleven months to see if estrone decreased their longevity.

Animals pretreated with TCP developed thick plaques in the skin when the copper injections were started, breaking down into deeply necrotic and indolent ulcers, similar to the animals in section 1. Both groups receiving TCP and copper showed the extremely agressive behavior characteristic of animals receiving TCP alone and rapidly became wasted and cachectic. Five developed cecal dilatation as did 2 animals in group 1. The estrone and cortisone animals showed only mild perihepatic adhesions with normal peritoneums and no cecal enlargement. Microscopically the liver and kidney showed the same picture seen in the animals reported in sections 1 and 2 with minimal changes present in the cortisone and estrone animals and profound cellular destruction in the TCP rats.

Plasma copper and ceruloplasmin were measured at age 4.5 and 6.5 months in groups 1, 2, 3, and 5 (Table 5). Group 4 had these analyses at 6.5 and again at 11 months while the animals were receiving both estrone and copper. The plasma copper (231 [206-249] $\mu$g. per 100 ml.) and ceruloplasmin (45.3 [37.8-52.3] mg. per 100 ml.) values at 11 months are in close agreement with those at 6.5 months. The other 4 groups show equal constancy between their 2 determinations. The animals pretreated with copper have and maintain higher plasma copper and ceruloplasmin levels, while those receiving TCP first have lower levels. We did not examine these data for significant differences since only the estrone animals and those pretreated with TCP showed marked differences compared to group 1. There were too few estrone animals, and those receiving TCP first are not strictly comparable since they had a maximum of 39 mg. of copper while the first group had 63 mg. before the second blood draw.

The animals pretreated with TCP (Table 6) show a tendency to lower liver and heart copper but similar kidney copper to group 1. Those receiving cortisone (group 3) and secondary TCP (group 2) have kidney copper concentrations

TABLE 6

TISSUE COPPER VALUES FROM ANIMALS RECEIVING HORMONE SUPPLEMENT

| | *No. of determinations* | *Liver copper (µg./gm.)* | *Kidney copper (µg./gm.)* | *Heart copper (µg./gm.)* |
|---|---|---|---|---|
| Group 1 | | | | |
| Copper only | 11 | 724<br>(247-1270) | 63.8 ± 40.6 | 10.8<br>(7.49-15.2) |
| Group 2 | | | | |
| Copper + TCP | 9 | 795<br>(475-1490) | 107.0 ± 84.1 | 9.80<br>(8.57-12.30) |
| Group 3 | | | | |
| Copper + cortisone | 5 | 881<br>(622-1110) | 274.0 ± 67.1 | 12.12<br>(9.82-16.5) |
| Group 4 | | | | |
| Copper + estrone | 3 | 647<br>(599- 733) | 54.1<br>(14.6-79.4) | |
| Group 5 | | | | |
| TCP + copper | 11 | 368<br>(250- 650) | 70.7<br>(19.3-106) | 4.32<br>(1.02-6.38) |

that are, respectively, significantly (P < .01) and insignificantly increased compared to the control animals.

Twenty-four-hour urine samples were obtained on some of these animals just before beginning the hormone injections (4.5 months), two weeks later, and just before autopsy (Table 7). A good agreement between the first 2 sets of collections for group 1, 2, and 3 is seen. Group 2 shows an increase in urine copper just before autopsy, which is significant (P < .01) compared to the value at age 5 months and to the value of the control group at age 6.5 months, while groups 1 and 3 do not.

The fecal copper concentration (Table 7) is quite constant between the 3 groups investigated and elevated to more than 10 times the value found in noncopper-injected animals (22 µg. per gram dry feces).

## DISCUSSION

Copper injection leads to reliable changes in the rat. Plasma, red cell copper, and ceruloplasmin values are increased, as are the liver, kidney, and heart, but not the skeletal muscle copper concentration. Urinary copper excretion increases about three- and fecal copper more than tenfold. This is to be expected as bile is the chief path of copper excretion.[11] The animals develop anemia, perihepatic adhesions, cellular necrosis, and fibrosis but not the picture of true cirrhosis.[1,2] These changes are similar to those seen in copper poisoning in other species.[12–14] Megacecum is apparently a new finding and may be due to the

TABLE 7

URINE AND FECAL COPPER VALUES

| | *4.5 months* | *5 months* | *6.5 months* |
|---|---|---|---|
| Group 1 | | | |
| Copper only | *(15) 6.93 ± 1.25 | 6.90 ± 2.86<br>†[300(104-631)] | *(11) 5.36 ± 1.76 |
| Group 2 | | | |
| Copper + TCP | *( 9) 6.20 ± 2.75 | 6.90 ± 2.99<br>†[279(139-434)] | *( 9) 13.2 ± 7.20 |
| Group 3 | | | |
| Copper + cortisone | *( 8) 9.58 ± 3.30 | 8.42 ± 2.80<br>†[301(132-406)] | *( 5) 7.01 ± 1.7 |
| Group 4 | | | |
| Copper + estrone | *( 3) | 10.26 ± 6.8 | *( 3) 4.26 ± 1.61 |

*These figures show the number of determinations of twenty-four-hour urine copper.

†Fecal copper excretion given as microgram per gram dry feces and urine copper as microgram per twenty-four-hours. Rats not receiving copper injections excrete a mean of 2.5 µg. per twenty-four-hour of copper in the urine and 22 µg. per gram of copper in the dried feces.

animals' ability to tolerate enough copper to destroy the myenteric plexuses.

The nonselected animals described in section 1 showed a moderate increase in plasma ceruloplasmin activity, while the selected rats described in section 2 showed a far more profound increase in this parameter (72.2 ± 8.4 mg. per 100 ml. compared to the nonselected animal's level of 43.8 ± 12.3 mg. per 100 ml.) (P .01). These blood changes were the only differences found between these animals. This increase in ceruloplasmin level may have been part of the reason the selected animals were able to tolerate the greater copper load.

The tissue copper levels recorded in our animals are at variance with those reported by Barka and co-workers.[2] They found the liver copper concentration in their copper-injected animals to be less than 100 μg. per gram. Others[14] have presented levels of tissue copper following copper injection fully as high as ours and we feel these are correct. The difficulty in analyzing large amounts of tissue copper is tying all of the metal into a readable compound and the tendency to error is toward the low rather than the high side.

Copper deficiency in the mother is mirrored in the fetus in the rat[15] and the sheep but copper supplement is felt incapable of increasing the fetal liver copper beyond the normal level.[16] The babies analyzed here refute this, showing highly significant increases in their liver copper concentrations.

In the rat TCP in this dosage can be tolerated for at least a year, while the addition of copper is swiftly lethal. Whether the copper or the hormone is given first makes no difference. TCP alters the handling of copper as the group 2 animals showed a highly significant increase in urine copper, and TCP alone will double the urine copper excretion. Conversely, animals receiving TCP first and then copper had lower plasma and tissue copper levels except in the kidney. As noted, this group cannot be strictly compared with animals receiving larger amounts of copper, but looking at animals reported in Table 1, which received only 17 mg. of copper before autopsy, we find tissue copper levels fully as high, for instance, as the group 1 animals. Therefore, it seems rather definite that the TCP did in some way interfere with the increase in plasma copper, ceruloplasmin, and tissue copper seen in the other groups. It is interesting in this regard that Wilson's disease becomes clinically manifest at puberty when the sex hormones are increasing.[7]

In contrast to the TCP effect is that of estrone and cortisone. Neither hormone was harmful and each may have been protective as these groups did not develop megacecum. Cortisone did not alter the output of urinary copper but significantly increased the concentration of kidney copper. Estrone certainly did not increase the urine copper and appears to hold the plasma copper and ceruloplasmin at a lower level than would be expected from copper injections alone (Table 5). This is opposite to its effect in the human being where it elevates the blood copper and ceruloplasmin to quite high levels.[4]

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The testosterone and cortisone acetate were furnished by Paul W. O'Connell, Ph.D., of the Upjohn Co., Kalamazoo, Michigan, and the estrone by A. C. Bratton, Jr., M.D., of Parke-Davis and Co., Ann Arbor, Michigan.

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# Erling Wilhelm Hansen

## Ophthalmologist, Teacher, Guardian of High Standards

C. WILBUR RUCKER, M.D.

Rochester, Minnesota

The medical school of the University of Minnesota owes much to Dr. Erling Hansen. He contributed to the development of its department of ophthalmology over a period of forty years, giving generously of his time in the clinics, operating rooms, and lecture halls. He enhanced the prestige of the department by meticulous observance of his own high ideals and by instilling them in his younger associates, partly through precept but largely by example.

Erling Wilhelm Hansen was born in Minneapolis to Mr. and Mrs. Martin Hansen on May 22, 1890. Both his father, who was a bookbinder, and his mother (nee Mary Field) had immigrated from Norway. All of his undergraduate education was obtained in Minneapolis in the public schools and at the University of Minnesota, where he received the degrees of bachelor of science in 1913 and doctor of medicine in 1915. He served a year of internship in 1914-15 at University Hospitals in Minneapolis. Graduate work in ophthalmology and otolaryngology, begun in 1915 in New York at the Post-graduate Hospital and Eye and Ear Infirmary and continued at the University of Minnesota, was interrupted by World War I. Later, in the fall and winter of 1929, he obtained additional training in Vienna.

He served in the medical corps of the United States Army from 1917 to 1919 with the First Division of the American Expeditionary Forces in France and with the Army of Occupation in Germany, entering as first lieutenant, being discharged as captain. For heroism under fire and for extraordinary devotion to the care of wounded when his unit was overrun by the enemy, he was decorated with the Croix de Guerre with bronze star by France and awarded the Silver Star by the United States Army. The citation for the latter reads in part, "The Division Commander cites . . . for distinguished conduct in action during the operations of this division south of Soissons, July 18-22, 1918, First Lieutenant Erling W. Hansen, Medical Corps, who worked continuously through the action, dressing and evacuating the wounded. For the last three days and nights of this period he worked in an area under heavy shell fire. Neither excessive work nor exhaustion deterred him and he continued at his post until all wounded reached his station and were evacuated." According to Dr. Hansen, the citation for the Croix de Guerre was a flowery version of the above in French.

Upon finishing his military service, he returned to Minneapolis where in 1919 he became associated with Dr. Horace Newhart in the practice of ophthalmology and otolaryngology, an association which continued until the death of Dr. Newhart in 1944. Their offices at first were in the Donaldson Building, and in 1930 were moved to the then new Medical Arts Building. In 1950, upon completion of the Doctors' Building, Dr. Hansen moved his offices there. His other associates included Walter E. Camp (1919 to 1928), C. Wilbur Rucker (1929 to 1937), Conrad J. Holmberg (1939 to 1942, 1946 to 1950), Richard C. Horns (1945 to 1956), and Llewellyn

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C. WILBUR RUCKER *is emeritus head of the Section of Ophthalmology of the Mayo Clinic, Rochester, Minnesota.*

E. Christensen (1956 to 1963). After 1930 his practice was confined largely to ophthalmology. He retired from active practice in March 1963.

His work at the university during much of his career included lectures to the senior medical students and graduates and attendance at the clinics and in the operating room (usually two hours each afternoon after a hurried lunch and for no remuneration). As his practice at first included eye, ear, nose, and throat, so did his earlier teaching; but after a few years he gave up teaching in otolaryngology. His academic rank began with scholar in otology in 1916, advancing through assistant in ophthalmology in 1919, instructor in 1926, assistant professor in 1928, and clinical assistant professor in 1938. In 1944 he was named clinical professor in ophthalmology and director of the department of ophthalmology. His title was changed in 1954 to head of the division, a position he held until his retirement from the university in 1958 as emeritus professor of ophthalmology.

He served on the staffs of Northwestern Hospital of Minneapolis, University Hospitals, Veterans Hospital, and Glen Lake Sanatorium; he was a member of the Hennepin County Medical Society and Minnesota State Medical Association, the Minnesota Academy of Medicine, the American Academy of Ophthalmology and Otolaryngology, the Minneapolis Clinical Club (later called the Minneapolis Academy of Medicine), and the American Ophthalmological Society. He was a Fellow of the American College of Surgeons and for some years a member of its board of governors. He was certified by the American Board of Otolaryngology in 1920 and by the American Board of Ophthalmology in 1926.

He served so effectively in the medical organizations to which he belonged and was so highly respected by the membership that most of them honored him by election to high office. The following are some of the evidences of their esteem:

Secretary-treasurer of the Hennepin County Medical Society, 1927 to 1932

President of Hennepin County Medical Society, 1932 to 1933

Recipient of American Academy of Ophthalmology and Otolaryngology honor key, 1944

Member of the house of delegates of the American Medical Association from the Minnesota State Medical Association, 1944 to 1949

Member of the board of secretaries of the American Academy of Ophthalmology and Otolaryngology, 1935 to 1956

Public relations director of the Pan-American Association of Ophthalmology, 1948 to 1950

Chairman, section on ophthalmology, American Medical Association, 1954 to 1955

President of Minnesota Academy of Ophthalmology and Otolaryngology, 1936 to 1937

President of the American Academy of Ophthalmology and Otolaryngology, 1957.

His colleagues knew him to be a first-class surgeon whose patients obtained excellent results. They knew him, too, as a conservative, knowledgeable consultant to whom they could turn freely for help whenever they needed it.

Dr. Hansen's effective teaching extended beyond the clinics at the university. He was in demand at county and state meetings as a speaker who would make a practical, useful contribution. At the annual meetings of the American Academy of Ophthalmology and Otolaryngology, he offered several instruction courses. Many of his publications exhibit the results of an early interest in immunity as it related to the field of eye, ear, nose, and throat. Two of the subjects were syphilis and the eye and the mechanism of uveitis. He contributed the ophthalmic aspects to a symposium on allergy for the American Academy of Ophthalmology and Otolaryngology in 1950, and his thesis for the American Ophthalmological Society, also presented in 1950, was entitled "Mucocutaneous Eruptions, Including Conjunctiva, Due to Drug Sensitivity." He wrote also on retrolental fibroplasia (*Postgraduate Medicine*, May 1952) and on leukemia (*Minnesota Medicine*, July 1942). To the centenary issue of *Minnesota Medicine* (April 1953), he contributed "Ophthalmology in the Past Century."

He married Ruth Eddy, a nurse and assistant in his office, on June 4, 1924. They have 2 children: Gordon Eddy Hansen, in business in Tucson, and Mary Elizabeth, now Mrs. Walter Rasula of Minneapolis. Through his son he has a grandson named Erling Wilhelm II, and through his daughter, twin granddaughters, Lynne Marie and Elizabeth Ann, their sister, Lauren Ruth, and a grandson, Jay Richard.

Although suffering constantly from residuals of dysentery incurred during World War I, Dr. Hansen not only carried on a busy practice but found some time for sports. He was fond of bowling and the good fellowship that went with it, and from 1920 until 1944 was a member of various bowling teams in a church league, at the Minneapolis Athletic Club, and in the City Mercantile League. He attained an average of 190, although his wife adds that many times it was well over 200. He enjoyed an occasional game of golf, but found it too time-consuming for regular participation. Somehow he made an opportunity for collecting stamps in a half-serious sort of way, and his collection from the countries of central Europe is good. His church affiliation is Congregational. He was a member of Alpha Kappa Kappa medical fraternity, the American Legion, Kiwanis, Minneapolis Athletic Club, and Edina Country Club.

Now, in retirement from active practice, he devotes himself to his greenhouse and to expert care of his roses.

My own most vivid impressions of him embrace his talent and fondness for telling stories in Norwegian dialect, a great generosity mentioned to none but its recipients, a deep devotion to his family and patients, and a sincere modesty. Few physicians in his community have earned from their colleagues a greater affection.

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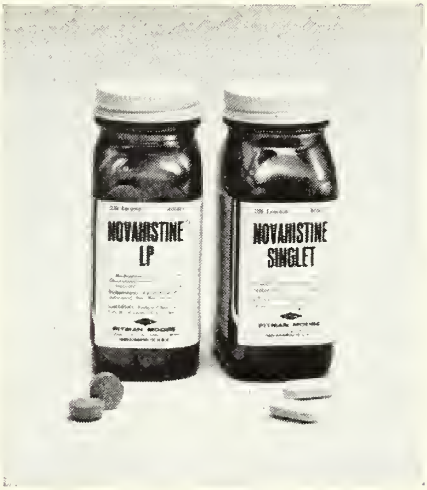

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# *Book Reviews . . .*

### The Human Adrenal Cortex: Its Function Throughout Life: Ciba Foundation Study Group No. 27

*edited by* G. E. W. WOLSTENHOLME *and* RUTH PORTER, *146 pp., ill., Little, Brown & Co., Boston, 1967.*

The discoveries of the biochemist and physiologist have made a profound impact on clinical medicine. This has always been true to some extent but the impact has become greater as time passes. Today the practice of medicine is not possible without the help of the laboratory.

The Ciba Foundation has made and is making a significant contribution to the satisfactory coordination of laboratory and bedside. This book is the 27th of the series and represents a summation of the function of the adrenal cortex throughout life.

There are 7 papers, all by well-known researchers, covering the adrenal cortex in the fetus, in childhood and adolescense, in pregnancy, under surgical and medical stress, in chronic disease, and in old age. These, together with opening and closing remarks by Dr. Soffer of Mt. Sinai and a brief review of the general research on the adrenal cortex by Dr. Verzár of Basle, make up the body of the book. Each paper contains a short summary, is well documented, and followed by a report of the discussion provoked by the paper. In many instances these discussions bring out points not emphasized in the formal presentation, thereby adding much to the interest and value of the book. The busy practitioner can read the summaries and profit by them. The papers themselves and the discussions require study but are worth it.

A good index adds to the usefulness of this little volume. Being handy pocket-sized (5¾ x 7¼), it can be carried about to fill those spare moments which we all have.

DAVID B. SABINE
*Yonkers, New York*

### Neuropsychiatry in World War II: Volume I: Zone of Interior

*edited by* ROBERT S. ANDERSON, COL., M.C., *898 pp., ill., Office of the Surgeon General, Department of the Army, U.S. Government Printing Office, Washington, D.C., 1966. $7.50*

Beginning with a sweeping survey of Army psychiatry from before World War I, the editors of this detailed account of the role played by neuropsychiatry recount not only the education and training of personnel and the consultant system but also set forth the gamut of problems and practices faced and more frequently solved than not in actual military situations.

Several chapters are devoted, for example, to hospital treatment, including station and regional hospitals and general hospitals and even troops in transit. Physicians, interested in this branch of medicine, will, no doubt, find interest in the pages concerning differing policies and conflicts faced by men in the field. Among these, to mention only a few, were disagreements concerning assignments for professional men, the conflicting goals for retaining manpower in the Army, the disagreement about the meaning of the phrase "maximum hospitalization," and the lack of agreement over the term "mental illness" as a cause for hospitalization and discharge. A special section is devoted to the Women's Army Corps.

The immediate value of the volume to civilians interested in the speciality and who now practice is the emphasis placed upon the contributions made by the neuropsychiatric nurse and the chaplain. These and others fit into a broader frame of reference which includes psychiatric social work, occupational therapy, and the reconditioning of psychiatric patients. Separate sections deal with both the neuropsychiatric technician and the psychology technician.

The volume concludes with a most helpful discussion of problems of adjustment after return to civilian life and with the care of the psychiatric patient after discharge. All this does not imply that the psychiatric service functioned well all the time or that further lessons were not to be learned. "During the crucial mobilization and early war periods," Colonel Glass writes, "the lack of planning, preparation, and direction resulted in inadequate or faulty psychiatric policies and practices, wastage of psychiatric personnel, and consequent huge losses of military manpower." The World War II experience, in short, clearly indicated the necessity for psychiatric leadership at the highest level of military medicine. The war also proved that civilian psychiatrists were able to adapt and utilize their skills but only after a considerable time period.

Perhaps, in the opinion of Colonel Glass, the most significant contribution of military psychiatry of the war revolved about the subtle or gradual orientation of psychiatry as a result of the wartime experience toward "considering the emotional problems of the individual within the context of his group and his social culture, instead of almost exclusive preoccupation with intrapsychic conflict or pathology."

PHILIP D. JORDAN, PH.D.
*Minneapolis*

## NEW BOOKS RECEIVED

**Proceedings of the 3rd International Pharmacological Meeting, 1966, Sao Paulo: Mode of Action of Anti-Parisitic Drugs: Volume 1**
edited by J. RODRIGUES DA SILVA and M. J. FERREIRA, 119 pp., ill., Pergamon Press, New York, 1968. $9

**Pharmacology of Reproduction: Volume 2**
edited by E. DICZFALUSY, 126 pp., ill., Pergamon Press, New York, 1968. $9

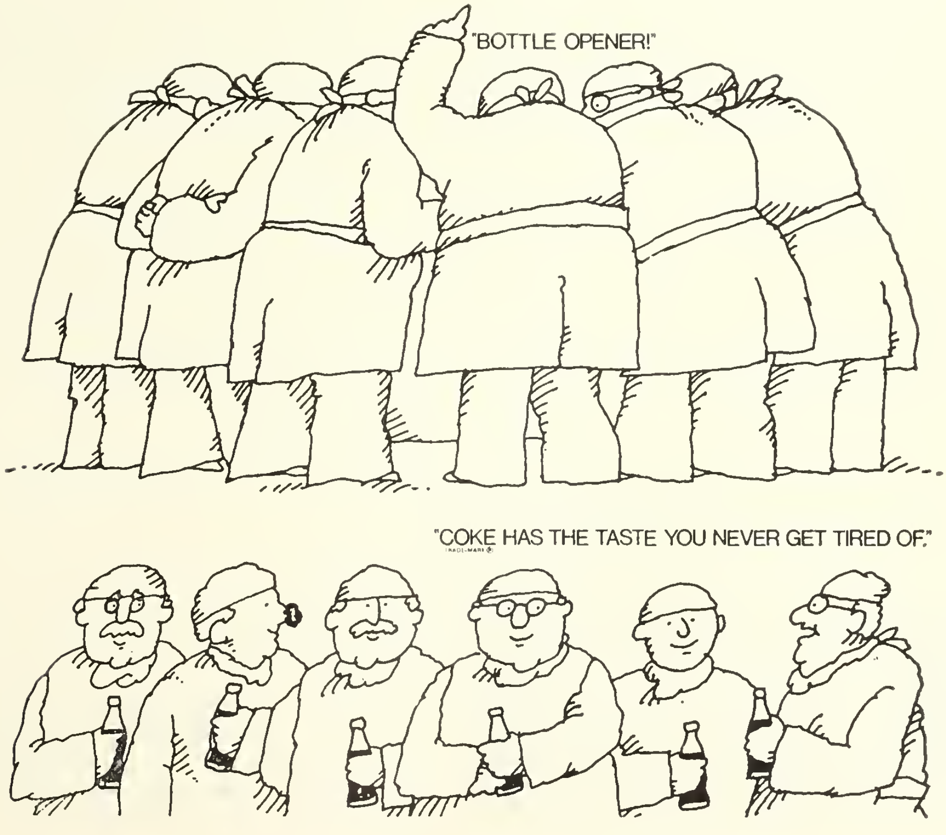
**Clinical Pharmacology: Volume 3**
edited by R. K. RICHARDS, 113 pp., ill., Pergamon Press, New York, 1968. $9

**Mechanisms of Drug Toxicity: Volume 4**
edited by H. RASKOVA, 104 pp., ill., Pergamon Press, New York, 1968. $9

**The Control of Growth Processes by Chemical Agents: Volume 5**
edited by A. D. WELCH, 91 pp., ill., Pergamon Press, New York, 1968. $8

**Drugs in Relation to Blood Coagulation Haemostasis and Thrombosis: Volume 6**
edited by G. V. R. BORN, 126 pp., ill., Pergamon Press, New York, 1968. $10

(Continued on page 14A)



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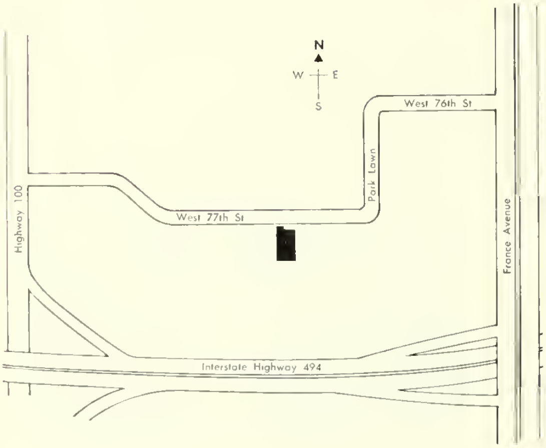

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# The medicobiological diagnost-therapeut will see you now

*(Sorry, but the Doctor isn't in.)*

We all missed a bet some 20 or so years ago.

Right then, when the scientific revolution in medicine was really gathering momentum, we should have abandoned the old names "doctor" and "physician."

But we didn't. And so today there's a good deal of misunderstanding between the medical profession and the public. (Opinion surveys show that most people are critical of doctors as a group; while doctors show increasing concern about their "image.") And in a relationship in which confidence and trust are basic to success, that's not good. Could it be that if we didn't confuse today's scientifically-oriented medical practitioner with yesterday's doctor there'd be less complaining? And, more important, less *cause* for complaint?

That old-time doctor we hanker after was comforting, reassuring, unhurried. And with good reason. Comfort and reassurance often were about all he had to offer. As a result, patients came to him only when they were desperately sick. If he sat up with a sick child, it was because he was at wit's end.

Today's doctor has at his command the tools of biochemistry, electronics, nuclear physics. Thanks to pharmaceutical research he can treat — and often cure — virtually every known disease. And because he *can* do so much more, he sees a lot more patients.

This is a change that takes getting used to . . . not only by patients but by physicians. Neither is now quite sure of his role, and friction can result.

Unless we do something about it.

For their part, leaders in medical education are putting increasing emphasis on teaching that is society- and people-oriented. They want to make sure that future physicians will not only master the necessary facts about molecules and microbes, but will keep fully aware of the Mikes and Marys in whom these phenomena take place.

And what can we, as patients, do?

As a start, here are three suggestions:

**Don't make house calls the index of how much your doctor cares.** Hand-holding can be taken care of in the home, but modern treatment often requires the office or even the hospital.

**Welcome referrals.** If your doctor sends you to a specialist — and the specialist to yet another — it's because medicine has become too complex for any one man to master. Be glad that your doctors know the limits of their expertise.

**Follow directions faithfully.** Today's drugs are often as potent as they are specific: what helped Uncle Bill may not help you . . . skipped doses can get you in trouble . . . and so can taking two pills if the doctor said one.

*A Message Presented*
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## NEW BOOKS RECEIVED

(Continued from page 11A)

**Physico-Chemical Aspects of Drug Action: Volume 7**
edited by E. J. ARIENS, 385 pp., ill., Pergamon Press, New York, 1968. $14

**Salt and Water Balance: Volume 8**
edited by K. H. BEYER, 109 pp., ill., Pergamon Press, New York, 1968. $9

**Pharmacology of Pain: Volume 9**
edited by R. K. S. LIM, D. ARMSTRONG, and E. G. PARDO, 250 pp., ill., Pergamon Press, New York, 1968. $13

**Monoamine Oxidase Inhibitors: Relationship Between Pharmacological and Clinical Effects: Volume 10**
edited by J. CHEYMOL and J. R. BOISSIER, 94 pp., ill., Pergamon Press, New York, 1968. $9

**Immunopharmacology: Volume 11**
edited by H. O. SCHILD, 167 pp., ill., Pergamon Press, New York, 1968. $13

**Vitiligo and Psoralens**
by ABDEL MONEN EL MOFTY, M.D., 221 pp., ill., Pergamon Press, New York, 1968. $10

**The Biochemistry of Foreign Compounds**
by DENNIS V. PARKE, Ph.D., 269 pp., ill., Pergamon Press, New York, 1968. $10

**Wenner-Gren Center International Symposium Series: Structure and Function of Inhibitory Neuronal Mechanisms**
edited by C. VON EULER, S. SKOGLUND, and U. SÖDERBERG, vol. 10, 563 pp., ill., Pergamon Press, New York, 1968. $24

**Circulation in Skeletal Muscle: Proceedings of an International Symposium held at Smolenice, Czechoslovakia, 1966**
edited by O. HUDLICKA, 356 pp., ill., Pergamon Press, New York, 1968. $15

**A Unified Health Service**
by DAVID OWEN, M.P., BERNIE SPAIN, and NIGEL WEAVER, 148 pp., Pergamon Press, New York, 1968. $5 (hard cover), $3 (flexi-cover)

**Electrolyte Metabolism in Severe Infantile Malnutrition**
by J. S. GARROW, M.D., ROGER SMITH, M.D., and E. EUGENE WARD, M.D., 168 pp., ill., Pergamon Press, New York, 1968. $9

**Jakob-Creutzfeldt Disease**
by WALTER R. KIRSCHBAUM, M.D., 251 pp., ill., American Elsevier Publishing Company, Inc., New York, 1968. $18.50

**Biological Properties of the Mammalian Surface Membrane: Wistar Institute Symposium Monograph Number 8**
edited by LIONEL A. MANSON, 160 pp., ill., Wistar Institute Press, Philadelphia, 1968. $5

**The Laboratory Animal in Gerontological Research: Proceedings of a Symposium Conducted by Committee on Animal Research in Gerontology**
by NORMAN M. SULKIN and others, 110 pp., ill., National Academy of Sciences, Washington, D.C., 1968. $4.50

**Electrocardiographic Notebook**
by M. IRENE FERRER, M.D., 3d ed., 141 pp., ill., Harper & Row, New York, 1968. $3.45

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by CHESTER M. ZMIJEWSKI, Ph.D., JUNE L. FLETCHER, and RONALD L. ST. PIERRE, Ph.D., 300 pp., ill., Appleton-Century-Crofts, New York, 1968. $13.75

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edited by A. McGEHEE HARVEY, M.D., LEIGHTON E. CLUFF, M.D., RICHARD J. JOHNS, M.D., ALBERT H. OWENS, JR., M.D., DAVID RABINOWITZ, M.D., and RICHARD S. ROSS, M.D., 1472 pp., ill., Appleton-Century-Crofts, New York, 1968. $22.50

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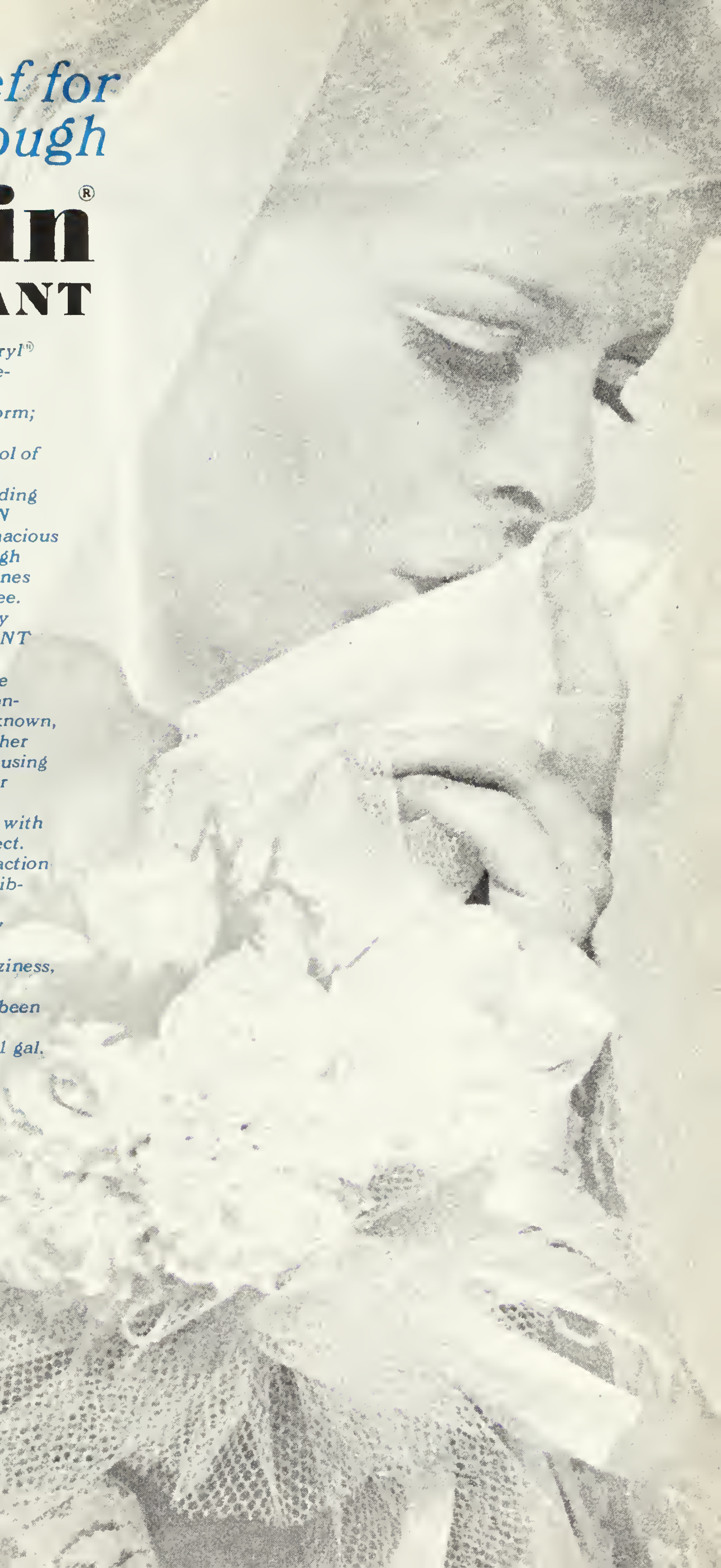

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**525 mg. Pancreatin activity**
Acid-resistant granules blend evenly with food mass in stomach.
Pancreatin released slowly in intestine as pH rises, to work on starch, fat, and protein digestion without dependence on individual ability to disintegrate enteric-coated tablets.

**100 mg. Ox Bile Extract N.F.**
Necessary for optimal fat digestion. Emulsifies fat and activates lipase.

### GOURMASE digestive capacity in calories:

| CAPSULES | CARBOHYDRATE | FAT | PROTEIN | TOTAL |
|---|---|---|---|---|
| 3 | 1088 | 238 | 215 | 1541 |
| 4 | 1451 | 317 | 288 | 2056 |
| 5 | 1814 | 396 | 360 | 2570 |
| 6 | 2177 | 475 | 432 | 3084 |

Digestive capacity of Gourmase is added to whatever digestive function exists in the individual.

# Gourmase-PB™

digestant plus sedative antispasmodic effect

contains the same ingredients as regular Gourmase, plus 15 mg. phenobarbital and 15 mg. belladonna extract. (Warning: May be habit forming.) GOURMASE-PB is indicated whenever digestive activity plus sedative or antispasmodic effect is desired o relieve the tension and/or pain associated with gas formation.

## OSAGE:

e capsule with each meal.

## ONTRAINDICATIONS:

A ute glaucoma, advanced renal or hepatic disease, b ary tract obstruction, or hypersensitivity to any of tl ingredients.

## RECAUTIONS:

A minister with caution in incipient glaucoma or pros tic hypertrophy. **Phenobarbital in prolonged and e essive dosage may be habit forming.**

## SIDE EFFECTS:

Blurring of vision, dry mouth and difficult urination may occur on higher dosage levels, rarely on usual dosage.

## CAUTION:

Federal law prohibits dispensing without prescription.

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*mankind can gain*
*It is not in pleasure,*
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John Dryden

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# Diagnosis of Blood Clotting Disorders in a Community Hospital

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There are many times when it is important to investigate a possible disturbance of blood coagulation. Evaluation of hemostatic function requires a careful medical history together with a selected group of laboratory tests which are within the scope of a general hospital laboratory. Both the history and laboratory studies are necessary and complement each other, but both approaches have definite limitations. The clinical history is very useful. However, some well established hereditary diseases such as hemophilia may lack a positive family history in as many as one-third of the cases. A patient may have a relatively mild hemostatic defect and the ability of his blood to clot effectively may never have been determined under stress. Despite the limitations of the history, a positive history suggestive of a bleeding state should never be dismissed since at the present state of our knowledge no laboratory test or combination of tests will invariably detect every coagulation disorder. Advances have been made in screening laboratory tests within recent years so that at the present time many have a diagnostic accuracy of over 90 to 95%. Nevertheless, tests of blood coagulation are still relatively crude biologic tests and there are large gaps in our knowledge of the factors concerned with hemostasis.

In considering hemostatic function, there is a tendency to think only in terms of plasma coagulation factors. However, it is important to consider that there are four major factors concerned with hemostasis. These are: [1] a normal vascular integrity and function, [2] normal platelet numbers and platelet function, [3] normal amounts of coagulation factors, and [4] normal activity of coagulation inhibitors. The vascular system and platelet function are best considered together. The small blood vessels are the first line of defense in maintaining normal hemostasis. Certain types of hereditary bleeding defects have as their only demonstrable defect an abnormality in vascular function as demonstrated by a prolonged bleeding time. Platelets are also intimately concerned with the integrity of the vascular wall. Probably minimal trauma to blood vessels occurs frequently, and platelets migrate to the site of injury to seal off the defect. Platelets also liberate a vasoconstrictor which promotes contraction of the vascular wall at the same time that the defect in the wall is sealed off by masses of agglutinated platelets. The immediate control of bleeding does not necessarily require the formation of a fibrin clot. The best example of this is seen in a patient with congenital afibrinogenemia in whom a normal bleeding time is obtained. Such a patient may get along fairly well despite the fact that the blood does not clot in a test tube.

The role of coagulation inhibitors is poorly defined. There is a system of natural inhibitors

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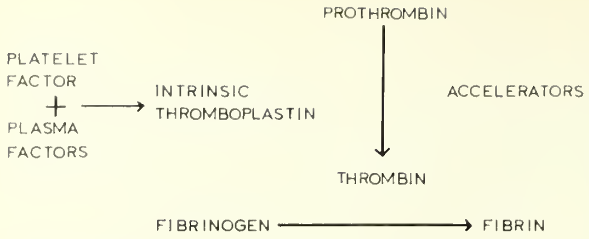

Fig. 1. Diagram of a simplified mechanism of blood coagulation

whose purpose is to limit the extent of blood coagulation. There is a fibrinolysin system in normal blood, and some coagulation disturbances are associated with increased activity of fibrinolysins.

The plasma factors concerned with clotting have been studied quite thoroughly, and the screening tests of hemostatic function are designed to measure the various components in the clotting mechanism. Because of the need of a standardized laboratory approach to the evaluation of suspected disturbances of blood coagulation, it is desirable that a group of tests or "coagulation profile" be performed, rather than isolated individual tests. The various individual tests in the "profile" should support and reinforce each other so that it is not necessary to attempt to interpret the significance of an isolated abnormal test. It is also desirable to test each of the various phases of blood coagulation by more than one method. For this reason, it is preferable to err in the direction of performing too many tests rather than too few tests. It has been our experience that following limited testing one might wish to have more studies, but by this time the patient may have already received transfusions of whole blood or plasma. The interpretation of coagulation studies becomes much more difficult under this circumstance.

## MECHANISM OF BLOOD COAGULATION

Figure 1 illustrates a simple scheme of blood coagulation. Since blood clotting is a complex process, attempts to establish arbitrary divisions in a continuous sequence are necessarily quite crude. Nevertheless, such arbitrary divisions are clinically useful since the assignment of a clotting disturbance to a certain phase of the clotting process provides a clue as to the clinical condition likely to be responsible for the disturbance. The first stage of blood clotting is concerned with the generation of thromboplastin. This material is produced by the interaction of plasma components and phospholipid derived from platelets. The plasma factors involved are designated factor V and factors VIII through XII. The step-wise reaction in the formation of intrinsic thromboplastin is not definitely known. However, it appears that the first step in coagulation is the activation of factor XII (Hageman factor), which is inert in circulating blood but becomes active when exposed to glass or certain adsorbents. The activated Hageman factor combines with factor XI to form a clot-promoting substance. The remaining plasma components and platelet factor apparently enter into the reaction after this "contact activation" phase. This is a relatively slow process and requires several minutes for the production of a potent intrinsic thromboplastin from blood.

The second stage in coagulation involves the conversion of prothrombin to thrombin under the influence of thromboplastin. This conversion requires other plasma factors whose function is to speed the rate of reaction. These factors are sometimes referred to collectively as accelerators. Two of these factors, factor V (labile factor) and factor X (Stuart factor), are also required for the generation of intrinsic thromboplastin in the first phase of clotting. A third factor, factor VII, is required for the conversion of prothrombin by tissue thromboplastin but not by intrinsic thromboplastin. This phase is relatively rapid, requiring only ten to fifteen seconds.

The third phase of coagulation is also a rapid phase and involves the conversion of fibrinogen to fibrin by thrombin generated in the second phase. The thrombin formed also catalyzes the further conversion of prothrombin to thrombin. One additional component, fibrin stabilizing factor (factor XIII), has been recognized recently and is responsible for developing the firm character of the fibrin clot.

Calcium ions are required in all phases of the clotting process, but this ion is present in adequate quantities and no clinical disturbances are known in which hypocalcemia is responsible for abnormalities in blood clotting. Not indicated in this scheme are the various inhibitors of coagulation which function normally to prevent excessive clotting.

## LABORATORY PROCEDURES TO EVALUATE HEMOSTASIS

A routine screening procedure to detect possible hemostatic defects should consider not only an evaluation of coagulation factors and inhibitors but also an evaluation of platelet numbers and function and an evaluation of the vascular factors in hemostasis. An examination of the blood smear provides a rough measure of platelet numbers and morphology. It also provides information as to possible hematologic diseases such as leukemia, myeloid metaplasia, and polycythemia, which are associated with abnormalities in platelets. The bleeding time is used to evaluate the vascular component in hemostasis. This is a measure of capillary function and platelet hemostatic function. This is a crude biologic test and is difficult to standardize, but it is the only approach available to evaluate this particular facet of hemostasis. Assuming that platelets are normal in number and vascular hemostatic function appears normal, the next step is to ascertain whether the coagulation factors are normal. If a coagulation abnormality is present, the various laboratory tests will aid in determining whether the abnormality involves the slow first stage or the faster second or third stage of clotting.

Figure 2 illustrates the various tests used to measure coagulation and the portions of the clotting mechanism which influence each of these tests. The whole blood clotting time, plasma recalcification time, and partial thromboplastin time are measures of the overall efficiency of the blood clotting mechanism. These tests are influenced chiefly by the slow first phase of clotting. If the faster second and third phases of clotting are shown to be normal by other tests, abnormalities in these tests can be taken as evidence of an abnormality in the first phase. The whole blood clotting time is the least sensitive of these tests and is prolonged in only 50 to 70% of patients with an abnormality involving first stage coagulation factors. Although it is a relatively insensitive test, it nevertheless is capable of detecting the more severe deficiencies of coagulation factors, as well as detecting potent circulating anticoagulants. It is a very good test for detecting abnormalities of the contact activation factors XI and XII. The recalcification time measures the clotting time of oxalated plasma after the addition of calcium and provides essentially the same information as the whole blood clotting time. The partial thromboplastin time is the clotting time of recalcified plasma after the addition of a phospholipid to the plasma. This test is much more sensitive than either the plasma recalcification time or the whole blood clotting time.

The test which is designed to measure most directly the first stage of clotting is the thromboplastin generation test. This is an attempt to simulate in a test tube the process of formation of intrinsic thromboplastin. The patient's blood is separated into plasma which is adsorbed with barium sulfate to remove certain of the components. Another portion is allowed to clot and the serum is collected. Dilutions of these fractions are mixed in a test tube with calcium and platelets or a phospholipid platelet substitute. These are allowed to incubate, and the rapidity and potency of the intrinsic thromboplastin generated is tested by removing portions of the incubation mixture at periodic intervals. These portions are then tested by their ability to clot a normal substrate plasma. Recently, a simplified modification of the standard test has been described which is quite adequate for screening purposes.

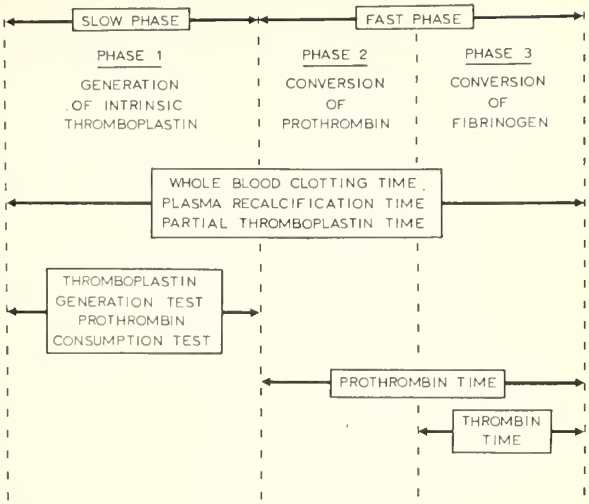
SLOW PHASE
FAST PHASE
PHASE 1
GENERATION OF INTRINSIC THROMBOPLASTIN
PHASE 2
CONVERSION OF PROTHROMBIN
PHASE 3
CONVERSION OF FIBRINOGEN
WHOLE BLOOD CLOTTING TIME
PLASMA RECALCIFICATION TIME
PARTIAL THROMBOPLASTIN TIME
THROMBOPLASTIN GENERATION TEST
PROTHROMBIN CONSUMPTION TEST
PROTHROMBIN TIME
THROMBIN TIME

Fig. 2. Diagram indicating common screening tests used to measure hemostatic function and the portions of the clotting mechanism measured by the various tests

The first stage of clotting is also tested by the prothrombin consumption test. In this test the patient's blood is allowed to clot in glass tubes under standardized conditions. If all first stage coagulation factors are normal and platelet function is normal, there will be a normal generation of intrinsic thromboplastin. This in turn will cause the conversion of prothrombin to thrombin and lead to the formation of a fibrin clot. If either the plasma factors or platelet components are abnormal, generation of intrinsic thromboplastin will be impaired. This in turn will impair the conversion of prothrombin in the second stage of clotting. As a consequence, a large amount of prothrombin will remain in the serum after the blood has clotted, whereas normally little prothrombin is present in blood which clots normally. This test consists of measuring the prothrombin time of the serum after clotting under standardized conditions. An abnormal prothrombin consumption test means that a relatively large amount of unconverted prothrombin remains in the serum after clotting. This in turn points to an abnormality in either the first stage coagulation factors or the platelet factors. This test is extremely useful in detecting

TABLE
SUMMARY OF HEMOSTATIC ABNORMALITIES
IN 350 PATIENTS

| *Abnormality* | *No. of cases* |
|---|---|
| Prolonged bleeding time only | 3 |
| *Abnormality of first stage coagulation* | |
| *Platelet abnormalities* | |
| *Thrombocytopenia* | |
| Idiopathic thrombocytopenic purpura | 11 |
| Secondary thrombocytopenic purpura | 3 |
| *Defective platelet function* | |
| Hereditary | 9 |
| Acquired | 8 |
| *Plasma factor abnormalities* | |
| *Hereditary* | |
| Hemophilia (AHG deficiency) | 1 |
| von Willebrand's disease | 1 |
| P.T.A. - Hageman factor | 2 |
| *Acquired* | |
| Associated with circulating anticoagulant | 1 |
| Associated with hypofibrinogenemia syndrome | 2 |
| Secondary to anticoagulant therapy | 7 |
| *Abnormality of second stage coagulation* | |
| *Hereditary* | |
| Factor V deficiency | 1 |
| *Acquired* | |
| Associated with liver disease | 9 |
| Associated with anticoagulant therapy | 17 |
| Associated with administration of other drugs | 2 |
| Associated with vitamin K deficiency | 1 |
| Associated with circulating anticoagulant | 1 |
| Etiology undetermined | 11 |
| *Abnormality of third stage of blood coagulation* | |
| Hypofibrinogenemia syndrome (retained dead fetus) | 2 |

abnormalities in platelet function. If the plasma factors are shown to be normal by the thromboplastin generation test and other tests, the abnormal prothrombin consumption result indicates that the abnormality lies in the platelet component concerned with clotting.

A very satisfactory screening test to measure the integrity of the second and third stages of clotting is the Quick one-stage prothrombin time. In this test, the first stage of clotting is bypassed since a preformed tissue thromboplastin is added to the test system. Therefore, this test measures factors concerned in clotting subsequent to the generation of intrinsic thromboplastin and is not influenced by abnormalities in the first phase of clotting. A normal prothrombin time may be taken as indicating a normal second and third stage clotting mechanism. An abnormal time indicates an abnormality in either prothrombin or accelerator factors V, VII, or X. The end point of the prothrombin time is the formation of a fibrin clot from fibrinogen present in the patient's plasma. Therefore, this test is also influenced by extremely low levels of fibrinogen. The test is also affected by anticoagulants and inhibitors active against prothrombin or accelerator factors.

The fibrinogen-fibrin system can be evaluated directly by observing the rapidity of clotting and the character of the clot formed when thrombin is added to plasma. This test is referred to as the thrombin time. This test is not influenced by factors concerned in the first and second phases of blood clotting. If this test is abnormal, further evaluation can be obtained by determining the highest dilution of patient's plasma which can be clotted by thrombin. This test is designated as the thrombin titer and can provide semiquantitative information as to the actual level of fibrinogen.

In the event that abnormalities are detected in any of the phases of clotting, it is necessary to determine whether this is due to a deficiency of a coagulation factor or due to an inhibitor or anticoagulant impairing the action of this factor. This is accomplished by mixing experiments in which mixtures of normal plasma and patient's plasma are tested in an attempt to determine whether the effect of the patient's plasma on a normal plasma is greater than could be accounted for by simple dilution.

### COAGULATION STUDIES IN HOSPITAL PATIENTS

The table is a summary of the hemostatic abnormalities encountered in 350 hospital patients studied using a screening coagulation battery of tests over a seven-year period. The type of patient that was studied was representative of the population of a community hospital. The patients were studied for several reasons. In some patients, elective surgery was contemplated and there was a questionable history of a bleeding tendency. Other patients were studied because of bleeding, which was responsible for admission or developed while in the hospital. Many of the patients were studied on more than one occasion and some of the patients had more than one hemostatic abnormality. Cases were classified by the major abnormality detected except in a few instances where the patient had two major coagulation abnormalities which appeared of equal clinical significance. A total of 92 major abnormalities was detected in the 350 patients studied, representing about 25% of all patients studied. Three patients had prolonged bleeding times without detectable abnormality in platelet or plasma factors.

### ABNORMALITIES OF FIRST PHASE OF COAGULATION

The majority of patients studied in this group had abnormalities in platelet numbers or function. This group was usually detected by a combination of normal partial thromboplastin time and thromboplastin generation tests in conjunction with an abnormal prothrombin consumption test. The prothrombin consumption test reflects both platelet and plasma factors concerned in the first stage of clotting. Since plasma factors were shown to be normal by the thromboplastin generation test and partial thromboplastin time procedure, the abnormal prothrombin consumption was taken to reflect either defective platelet activity or reduced numbers of platelets. Fourteen patients in this group had thrombocytopenic purpura. Eleven of these were classified as idiopathic thrombocytopenic purpura. Three patients had thrombocytopenic purpura secondary to other diseases. The patients with thrombocytopenic purpura were studied either because the thrombocytopenic state was not recognized until after the clotting study was performed or because of the possibility of an associated abnormality of plasma coagulation factors.

In 17 patients, prothrombin consumption was abnormal but platelets were normal in numbers as judged from an examination of the blood smear and from direct platelet counts. In these patients, the abnormal prothrombin consumption was corrected by performing the test with the addition of normal platelets or a phospholipid platelet substitute to the patient's blood before coagulation. It was not always possible to be certain whether the abnormality in some patients was hereditary or acquired. In 9 patients there was no associated disease such as polycythemia or myeloid metaplasia known to be associated with defective platelet function, and these were considered to be hereditary. In 8 patients, the defective platelet function was probably an acquired abnormality. Two of these patients had carcinoma of the prostate with bone metastases and with high acid and alkaline phosphatase values. Both of these patients had bleeding tendencies despite the presence of adequate numbers of platelets and without other evidence of impairment in bone marrow function. Although the usual abnormality responsible for bleeding in prostatic carcinoma is in the fibrinogen-fibrinolysin system, neither of these patients had low fibrinogen levels and no evidence of fibrinolysin was detected.

Fourteen patients had abnormalities of plasma factors which were responsible for the defective first stage coagulation mechanism. Four of these were hereditary. Single examples of classic hemophilia and von Willebrand's disease were encountered. Two patients had abnormalities in the contact activation phase of clotting involving factor XI (P.T.A.) or factor XII (Hageman factor). A more precise characterization of the defect was not made.

In 10 patients the abnormalities in the first phase of coagulation were acquired. One patient with a collagen disease had a circulating anticoagulant active in this phase of coagulation. In 2 patients, the abnormality of first stage coagulation was associated with hypofibrinogenemia due to a retained dead fetus. On the basis of thromboplastin generation test studies, the abnormality was interpreted as a depletion of factor VIII (antihemophiliac globulin). It is generally considered that this depletion is the result of consumption of this substance during the process of defibrination. In the 2 cases in our series, the effect was transient and the first stage coagulation factors returned to normal levels following expulsion of the dead fetus and the return of fibrinogen to normal levels.

### ABNORMALITIES OF SECOND PHASE OF COAGULATION

Only one hereditary abnormality in second stage clotting was encountered. This is interpreted as an example of mild factor V (labile factor) deficiency. This patient was studied on several occasions and the abnormality was noted on each occasion.

The majority of the second stage coagulation abnormalities were of the acquired type. Abnormalities of the second stage of coagulation reflect reduction of prothrombin or accessory factors V, VII, or X. These factors are synthesized in the liver and are frequently reduced in liver disease. The synthesis of prothrombin, factor VII, and factor X by the liver requires vitamin K. This vitamin is synthesized within the lumen of the bowel by intestinal bacteria, and additional quantities of the vitamin are supplied in a normal diet. Vitamin K is fat soluble and requires bile salts for proper adsorption. Obstructive jaundice may be associated with depression of these coagulation factors due to lack of bile salts in the lumen of the intestine, which are necessary for adsorption of the vitamin. Anticoagulant drugs produce their effect by depressing synthesis of these vitamin K dependent coagulation factors by the liver. Certain other drugs, such as propylthiouracil, produce a depression of these factors by impairing hepatic synthesis of these coagulation proteins. Prolonged antibiotic therapy may impair synthesis of the vitamin by its effect on the intestinal flora.

Deficient adsorption of the vitamin may also develop in chronic diarrhea and other diseases associated with maladsorption from the intestinal tract. One example of vitamin K deficiency was encountred in this series of patients. Hemorrhagic manifestations developed in a patient with impaired intake of food in whom alteration of intestinal flora developed secondary to long-term antibiotic therapy. The bleeding syndrome responded promptly to a parenteral vitamin K preparation.

In 17 patients, the abnormality was associated with anticoagulant therapy. In 1 patient in this group, the hemorrhagic diathesis appeared to be due to deliberate self-administration of a coumadin anticoagulant. Two other patients were encountered in whom the depression of second stage coagulation factors was due to administration of other drugs. One example of a circulating anticoagulant influencing second stage factors was found. In 9 patients the abnormality was associated with chronic liver disease. In 11 patients, the cause of the abnormal second stage coagulation was not determined. A number of these cases were probably secondary to either impairment of liver function in systemic disease or unrecognized chronic liver disease. The data in this last group of patients were not sufficient for further classification.

Only two third stage coagulation defects were encountered. These were both examples of marked hypofibrinogenemia occurring late in pregnancy associated with a retained dead fetus. No fibrinolysin was detected in either case. One case was unusual in that the patient had an abnormal fibrinogen which precipitated spontaneously from plasma at low temperature. In both cases there was also an associated abnormality in the thromboplastin generation test as indicated previously, apparently due to a depletion of factor VIII. In both patients, induction of labor and delivery were accomplished without excessive bleeding and no fibrinogen was administered. Fibrinogen levels returned to normal promptly following evacuation of the dead fetus and the thromboplastin generation tests also returned to normal.

## SUMMARY

A review of the normal mechanism of blood coagulation is presented, and the various laboratory tests employed for investigating suspected hemostatic defects are described. The tests are not complicated and testing materials are available readily from commercial sources.

Abnormalities of blood coagulation were encountered in 25% of 350 selected patients studied in a community hospital over a seven-year period. The abnormalities detected in about half of these patients involved the first phase of blood coagulation, concerned with the generation of intrinsic thromboplastin. Abnormalities in platelet numbers and platelet function were an important cause of bleeding in this group. In a second large group of patients, the abnormalities involved the second phase of blood clotting, concerned with the conversion of prothrombin. Abnormalities involving the fibrinogen-fibrin phase of blood clotting were relatively uncommon.

A selected battery of tests is much more useful than isolated individual tests in studying suspected hemostatic defects. The information obtained from proper identification and characterization of coagulation disturbances can be useful in the clinical management of patients.

## SUMMARIES OF ILLUSTRATIVE CASES

*Case 1. Drug-induced thrombocytopenic purpura.* L.B., a 61-year-old man, was admitted to the hospital because of bleeding from the teeth and gums and numerous ecchymoses. He had previously sustained a myocardial infarction and was receiving coumadin and a quinidine preparation.

Physical examination was unremarkable except for the evidence of cutaneous bleeding and oozing of blood from gingivae. The initial clinical impression was bleeding due to coumadin overdosage. However, coagulation studies revealed that the plasma prothrombin time was not markedly prolonged (patient, 20 seconds; control, 15 seconds). The bleeding time was prolonged. The whole blood coagulation time and partial thromboplastin time were also prolonged. The prothrombin consumption test was abnormal (serum prothrombin time, 13 seconds; control, 24 seconds). A morphologic examination of a blood smear revealed almost no platelets present in the smear.

The coagulation data indicated a moderate prolongation of the second phase of blood clotting which was compatible with the effect of anticoagulant therapy. This was not considered excessive. In addition, the patient had a marked thrombocytopenia, which was reflected in the abnormal prothrombin consumption tests and the prolonged bleeding time. This was interpreted as drug induced because of the history of ingestion of a quinidine preparation which is known to induce thrombocytopenia in susceptible patients. Treatment consisted of steroids and a parenteral vitamin K preparation, but the patient developed a massive cerebral hemorrhage a few days later and died shortly thereafter.

*Case 2. Defective platelet function.* M.C., a middle-aged woman, was studied before elective teeth extractions. This was undertaken because previous dental procedures had been associated with severe bleeding. There was no other evidence to suggest a coagulation disturbance.

Laboratory studies revealed a slightly prolonged bleeding time. Whole blood coagulation time, partial thromboplastin time, and thromboplastin generation tests were all within normal limits, indicating normal first stage plasma coagulation components. The plasma prothrombin time was also normal. However, prothrombin consumption was markedly abnormal. The serum prothrombin time was fifteen seconds, which was essentially similar to the plasma prothrombin time. This could be corrected to normal by the addition of platelet phospholipid or fresh platelets to the patient's blood before clotting. These findings were taken to indicate that the abnormality was due to defective platelet function. The absence of any underlying disease associated with platelet function defect suggested that the abnormality was hereditary. This patient was studied on several other occasions over a period of several years, and this same abnormality was detected in every instance.

*Case 3. Defective platelet function.* R.F., a 45-year-old man, developed a sudden onset of gross painless hematuria. Physical examination and routine laboratory studies were normal. Urologic studies, including urethroscopy, cystoscopy, bilateral ureteral catheterization, and retrograde pyelography, were normal.

Platelets were normal in number and morphology. Special blood coagulation studies revealed normal whole blood coagulation time, partial thromboplastin time, plasma prothrombin time, and thromboplastin generation test, indicating that the plasma coagulation factors concerned with hemostasis were within normal limits. However, the prothrombin consumption test was markedly abnormal. The serum prothrombin time on one test was sixteen seconds with a control of twenty-five seconds. A repeat test performed at another time revealed a serum prothrombin time of fourteen seconds with a control of twenty-five seconds. The bleeding time was prolonged. The evidence of normal plasma coagulation factors with an abnormal prothrombin consumption test indicated that the abnormality in the latter test was due to abnormal platelet function. When platelet phospholipid or fresh normal platelets were added to the patient's plasma before clotting, the prothrombin consumption values were corrected to the normal range. This was taken as additional evidence that the abnormality was present in the platelets rather than in the plasma component. A diagnosis of thromboasthenia was made. The abnormality was probably hereditary, since no underlying disease associated with defective platelet function was recognized.

*Case 4. Defective platelet function.* G.E. was a 75-year-old man with known carcinoma of the prostate previously treated by orchiectomy and diethylstilbestrol (Stilbestrol®). He was admitted to the hospital following a fall at home which was followed by headache and confusion. He later sustained a second fall which was associated with further head trauma and marked bleeding. While in the hospital, several ecchymoses were noted which were out of line with the extent of injury. Serum acid and alkaline phosphatase were both moderately elevated.

Special blood coagulation studies revealed normal whole blood clotting time, plasma recalcification time, partial thromboplastin time, and thromboplastin generation test. No fibrinolysins were demonstrated and fibrinogen was normal. Platelets were present in normal numbers and appeared normal morphologically. However, the prothrombin consumption test was very abnormal when tested on several occasions. This could be restored to normal by addition of normal platelets to the patient's blood before coagulation.

The patient died in the hospital. The autopsy revealed prostatic adenocarcinoma with metastases, numerous subcutaneous ecchymoses, and a subdural hematoma.

*Case 5. von Willebrand's disease.* A.O., a 10-month-old girl, was admitted to the hospital because of profuse bleeding from a cut under the lip which developed following a fall. The history revealed easy bruising since birth but no evidence of petechial hemorrhage or bleeding into the joints or gastrointestinal tract. Aside from the easy bruisability, the child was considered by the parents to be in good health.

Physical examination revealed that the child was well developed and well nourished. Lung fields were clear and the heart sounds were normal. There was an ecchymosis over the left chest and a small bruise on the right abdomen. Small bruises were also noted on both lower extremities.

Laboratory studies revealed hemoglobin, 7.9 gm., and leukocytes, 17,500, with a normal differential count. Platelet count was 325,000.

The coagulation studies revealed a markedly prolonged bleeding time of fifteen minutes and a normal Lee-White coagulation time. Plasma prothrombin time was normal, partial thromboplastin time was markedly prolonged, and prothrombin consumption was borderline (patient, 22 seconds; control, 33 seconds). Thromboplastin generation was distinctly abnormal, and the abnormality was localized in the barium sulfate adsorbed fraction of the patient's plasma. This indicated factor VIII (antihemophiliac globulin) deficiency. The presence of this abnormality in conjunction with the distinct prolongation of the bleeding time indicated a diagnosis of von Willebrand's disease.

The bleeding was controlled by application of pressure for about ten minutes. The following day, the child had a tarry stool, apparently representing swallowed blood. After this, stools became normal in color and no further bleeding was noted. The child was discharged six days after admission on oral iron therapy and the hemoglobin gradually became elevated to normal values over the succeeding month.

*Case 6. "Contact activation" factor deficiency.* J.S., an 18-year-old girl, was admitted to the hospital because of a respiratory infection associated with some blood streaking of her sputum. Past history with respect to hemorrhagic tendencies was completely negative. There had never been any excessive or unusual bleeding, and there were no menstrual irregularities. She had previously had a tonsillectomy without incident, and she was able to indulge in vigorous sports without difficulty. There was no family history of excessive bleeding. The physical examination, chest X-ray, and routine laboratory studies were essentially normal.

Coagulation studies revealed a normal bleeding time, moderately prolonged whole blood clotting time, and markedly prolonged partial thromboplastin time. Platelets were present in normal numbers and appeared normal morphologically. The plasma prothrombin time was normal. These findings suggested that the coagulation abnormality involved the first phase of blood clotting concerned with the generation of intrinsic thromboplastin. The prothrombin consumption test was markedly abnormal, which also supported the impression of a first stage defect. The thromboplastin generation test employing mixtures of patient's adsorbed plasma and serum reagents with normal plasma and serum reagents indicated that the abnormality was not due to a deficiency of factor VIII (antihemophiliac globulin) or factor IX (Christmas factor) and suggested that the coagulation defect was due to factor XI (P.T.A.) or factor XII (Hageman factor) deficiency. These factors are concerned with "contact activation" of plasma in the very early stages of generation of thromboplastin, and a distinction between these two factors is difficult. No circulating anticoagulant was demonstrated.

Since the patient had no symptoms of bleeding, it appeared that the coagulation abnormality reflected a factor XII deficiency rather than a factor XI deficiency. No further classification of the defect was attempted. The patient was advised that the hemostatic abnormality need not be a cause of concern.

*Case 7. Circulating anticoagulant affecting first phase of coagulation.* M.R., a 19-year-old girl, was admitted to the hospital for liver biopsy for investigation of a suspected chronic hepatitis. She was known to have a strongly positive cephalin flocculation test and a positive serologic test for syphilis. Physical examination and routine laboratory studies were normal except for the serologic abnormalities.

Coagulation studies revealed a markedly prolonged whole blood clotting time, plasma recalcification time, and partial thromboplastin time. However, the prothrombin time was only slightly prolonged (seventeen seconds; control, fourteen seconds). The marked impairment of the first 3 tests associated with only minimal prolongation of the prothrombin time indicated that the abnormality involved the first phase of clotting. One volume of patient's plasma added to 4 volumes of normal plasma produced a marked prolongation of the recalcification time of the normal plasma. This was interpreted as indicating a potent circulating anticoagulant active in the first phase of blood clotting. The abnormal flocculation test and serologic test probably reflected an underlying systemic collagen disease.

Liver biopsy was not performed because of the hemostatic abnormalities detected. Despite the pronounced laboratory abnormalities, the patient had no clinical evidence of bleeding.

*Case 8. Chronic liver disease.* L.C., a 57-year-old man, was admitted to the hospital because of hematuria. Urologic studies were unremarkable except for slight prostatic congestion. Blood coagulation studies were normal except for plasma prothrombin time of eighteen seconds with a control of fifteen seconds. Other studies revealed a slightly elevated transaminase, slight decrease in albumin, and increased bromsulphthalein retention. There was no improvement in the abnormality in prothrombin time after the administration of a parenteral preparation of vitamin K. The presence of an abnormality in second stage coagulation which did not respond to vitamin K suggested chronic liver disease as the most likely cause of the abnormality. A needle biopsy of the liver was performed which revealed an active portal cirrhosis.

*Case 9. Vitamin K deficiency.* H.C., a 55-year-old woman, was admitted to the hospital with a severe staphylococcal pneumonia involving the entire left lung which was complicated by a large left empyema. She received intensive antibiotic therapy consisting of penicillin, sodium methicillin (Staphcillin®), ampicillin, tetracycline, and sodium cephalothin (Keflin®). She was maintained on intravenous fluids since she was unable to take food or fluid orally because of severe nausea and vomiting. A tracheotomy was performed and thoracotomy drainage of the empyema was instituted. While in the hospital, she developed abdominal distension interpreted as secondary to a volvulus of the cecum. A cecostomy was performed, followed later by an ileotransverse colostomy. It was difficult to maintain satisfactory fluid balance and nutrition. Electrolyte disturbances and marked hypoproteinemia developed. After several weeks in the hospital, she developed hematuria, bleeding from the cecostomy wound, and rectal bleeding.

Coagulation studies revealed a normal whole blood coagulation time, markedly prolonged partial thromboplastin time, and a prolonged plasma prothrombin time of twenty-seven seconds, with a control of thirteen seconds. The thromboplastin generation procedure revealed minimal impairment. The prothrombin consumption test was normal. Further studies indicated that the cause of the prolonged prothrombin time was depression of accessory coagulation factors VII and X. No significant depression of prothrombin or factor V was demonstrated. The data were taken to indicate an acquired depression of vitamin K dependent coagulation factors primarily due to impairment of synthesis of vitamin K by intestinal flora secondary to the intensive antibiotic therapy. Impaired adsorption of vitamin K from the bowel and poor food intake may also have been contributory factors.

The patient was placed on phytonadione (Mephyton®), 5 mg. four times daily, and the following day the prothrombin time was seventeen seconds. A subsequent determination performed a few days later revealed return of prothrombin time to normal. No further bleeding occurred. She eventually was discharged from the hospital three months after admission.

*Case 10. Hypofibrinogenemia.* Mrs. M.P., a 46-year-old multipara, was admitted to the hospital at thirty-eight weeks' gestation. She had not felt fetal movement for the previous month and no fetal heart tones had been detected by her physician.

The major abnormalities in the blood coagulation study were identified in the fibrinogen-fibrin phase of clotting. The clotting time of the patient's plasma with thrombin was prolonged, suggesting a low fibrinogen level. The thrombin titer, which is a measure of the highest dilution of patient's plasma clotted by thrombin, also revealed a very low fibrinogen level estimated at about 15 mg. percent. No inhibitors or circulating anticoagulants were demonstrated. Whole blood clotting time was abnormal and clot retraction was poor. The plasma prothrombin time was prolonged, probably due to the low fibrinogen level. Tests of the first stage of blood coagulation were abnormal. The coagulation studies were interpreted as indicating defects in both first stage and third stage clotting mechanisms. The hypofibrinogenemia was interpreted as the major abnormality. The abnormalities in the first stage of clotting were interpreted as reflecting consumption of these factors in the process of defibrination.

Membranes were ruptured and induction was accomplished with oxytocin (Pitocin®). No fibrinogen was given. Delivery was associated with only moderate blood loss. The following day, the fibrinogen had returned to normal and all coagulation studies were within normal limits.

# "Cri Du Chat" Syndrome with Additional Physical Findings of Trisomy 17-18

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and THEODORE KUSHNICK, M.D.

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In 1963, Lejeune and associates reported a new clinical syndrome complex associated with a cytogenetic defect and gave to this the name "Le syndrome du cri du chat"—"the cat-cry syndrome."[1]

The three infants described in this publication demonstrated microcephaly, micro- and retrognathia, bilateral epicanthus, hypertelorism, low-set ears, failure to thrive, a "cat-like" cry, and mental retardation.

All of these infants revealed a karyotype of 46 chromosomes which were normal except for one in the B group whose short arms were smaller than usual, resembling the size of the short arms of chromosome 17.

The following case report is of a child with the physical and chromosomal findings of the cat-cry syndrome and additional features resembling 17-18 trisomy.

## CASE REPORT

This female infant was delivered after a forty-week gestation on September 12, 1966, to a primiparous 23-year-old mother. The mother was in good health throughout her pregnancy and received no medications. The father was 24 years old. The duration of labor was ten hours. The Apgar rating was 4 at delivery, 6 at two minutes, and 7 at five minutes. The child weighed 6 lb. 1 oz. (2.75 kg.) and measured 17½ in. (43.75 cm.).

*Physical examination.* Physical examination revealed a head circumference of 31.2 cm. and chest circumference of 29.5 cm. She was noted to have a peculiar harsh cry. The remarkable findings were absent eyelashes, narrow palpebral fissures, a ridged occipital suture line, and bilateral calcaneal valgus with ecchymotic areas on the

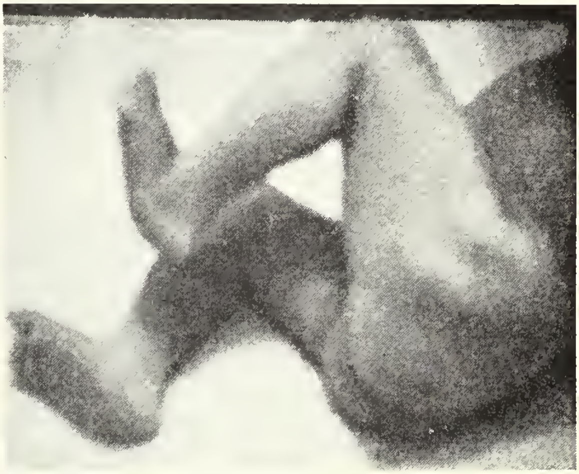

Fig. 1. Photograph of feet demonstrating a "rocker-bottom" deformity

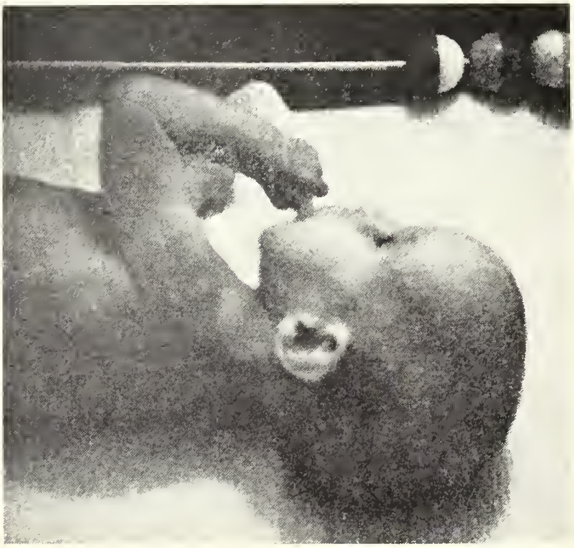

Fig. 2. Photograph showing low-set and malformed ears and micro- and retrognathia

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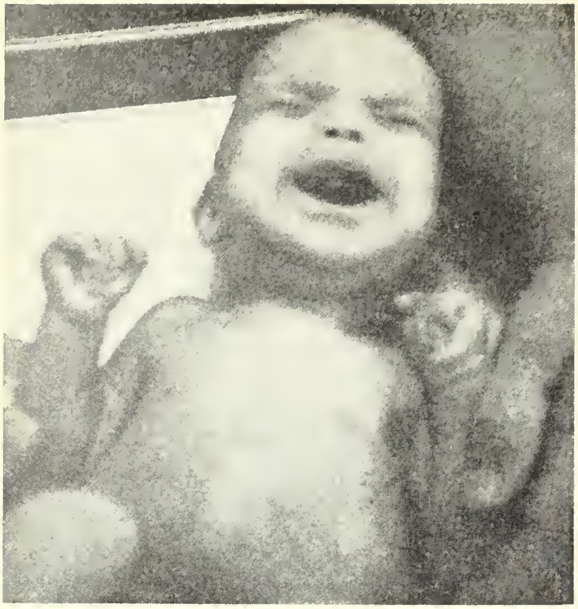

Fig. 3. The hands show second digit over third and fifth digit over fourth.

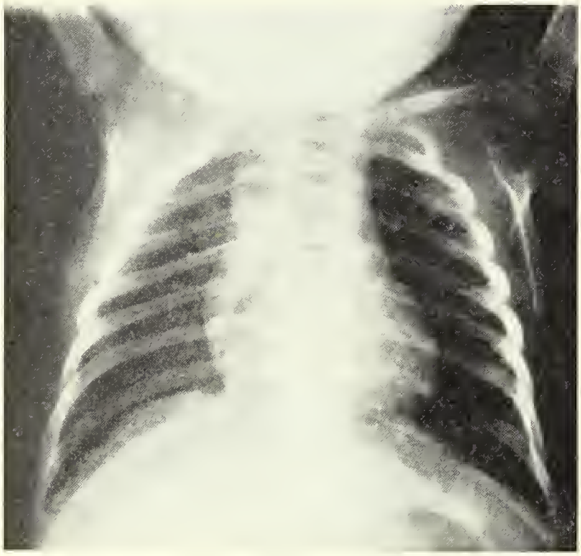

Fig. 4. Chest X-ray showing 11 pairs of ribs

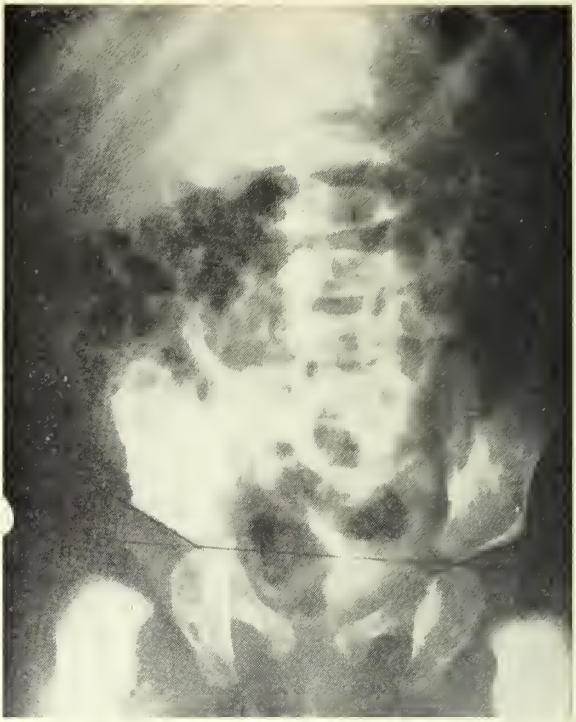

Fig. 5. X-rays of pelvis showing narrowing of iliac wings with an antimongoloid configuration

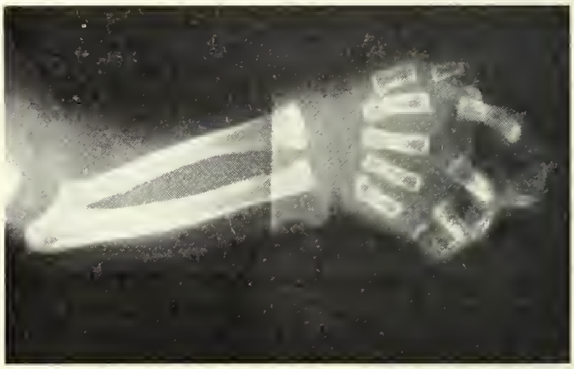

Fig. 6. X-ray of hands. Note flexion contraction of fingers with tendency toward ulnar deviation of third, fourth, and fifth fingers.

plantar aspects of the feet. The orthopedic consultant described her feet as demonstrating a "rocker-bottom" deformity (Fig. 1) and X-rays showed congenital vertical talus.

She sucked feebly at first but her intake by the fourth day of life was 345 cc. of an isocaloric modified cow's milk formula in twenty-four hours. Her weight loss had stabilized by the fourth day and she was discharged on the fifth day weighing 8 oz. (226 gm.) less than birth weight.

At age 2½ weeks she weighed 5 lb. 14 oz. (2,665 kg.), measured 17¾ in. (44.5 cm.), was averaging 2½ oz. (75 cc.) per feeding for 6 feedings a day, and had a slow suck.

At the age of 1 month she had achieved the weight of 6 lb. 11 oz. (3,052 kg.) and the height of 18½ in. (46.5 cm.). Her head circumference was 34 cm. and chest circumference was 31 cm. Her intake was now about 14 oz. (420 cc.) per day. The mother reported that she was able to raise her head from the prone position but had no startle reflex to sudden noises. Over the next three weeks she showed poor weight gain, continued to have a poor intake, became irritable, and developed an upper respiratory infection. At this point, she was admitted to the Babies' Hospital Unit of the United Hospitals of Newark (New Jersey). In addition to the aforementioned findings, she was found to be a hypertonic infant with a cat-like cry; she had a round face, hypertelorism, epicanthal folds, and microphthalmia with divergent strabismus. The ears were low set and malformed. There was micro- and retrognathia and a

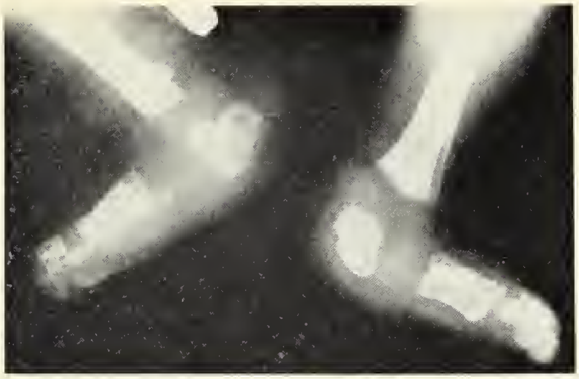

Fig. 7. X-ray of feet showing vertical talus

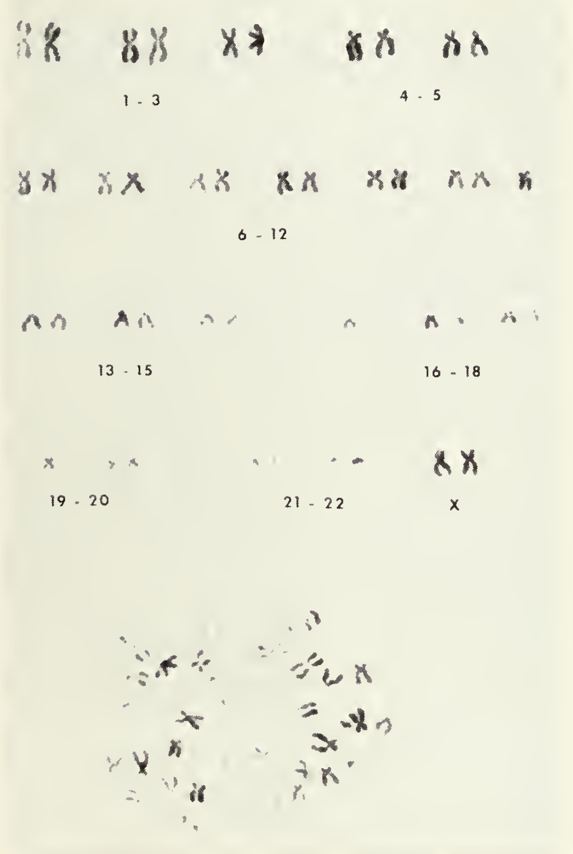

Fig. 8. Chromosome analysis showed the patient had a mosaicism for partial deletion of the short arm of one of the No. 5 chromosomes.

high palate (Fig. 2). No cardiac abnormality was noted. The genitalia were normal.

The hands showed the second digit over the third and the fifth digit over the fourth (Fig. 3).

*Laboratory studies.* Urinalysis, complete blood count, inorganic phosphorus, calcium, alkaline phosphatase, CO$_2$ content, and twenty-four-hour urine amino acid chromatography were normal. Roentgenograms of the skull and an intravenous pyelogram were read as being normal. Chest X-ray revealed 11 pairs of ribs but revealed no other abnormality (Fig. 4). X-rays of the pelvis showed narrowing of the iliac wings with an antimongoloid configuration (Fig. 5). Films of the hands (Fig. 6) and feet (Fig. 7) demonstrated flexion contraction of the fingers with a tendency toward ulnar deviation of third, fourth, and fifth fingers. The previously described vertical talus was noted.

*Cytogenetic study.* Chromosome analysis was performed on cultures from peripheral blood and bone marrow using a modification of the technique of Moorhead and co-workers.[2] The peripheral blood culture revealed normal counts of 46 chromosomes with no abnormal configuration on karyotypes. The bone marrow culture had normal counts of 46 chromosomes but karyotypes demonstrated a partial deletion of the short arm of one of the No. 5 chromosomes (Fig. 8). Thus, the patient had a mosaicism for partial deletion of the short arm of one of the No. 5 chromosomes. Barr body counts from buccal mucosal smears were consistent with the female pattern. Chromosome analyses from peripheral blood cultures of the parents were normal.

## COMMENT

The karyotypic abnormality in the infant described in this case report is consistent with the "cat-cry" syndrome aberration.

The clinical observations, however, do not correspond completely with Lejeune's findings. The "rocker-bottom" feet,[3] vertical talus,[4,5] overlapping fingers[6] with flexion contractures,[7] and hypertonicity[3,6,7] are more characteristic of trisomy 17-18 syndrome. This variability of findings of congenital malformation in an established cytogenetic entity points up the difficulty in naming a cardinal clinical symptom as being typical of a chromosomal aberration.

## SUMMARY

A case is reported of an 8-week-old infant who manifested a cat-like cry and failure to thrive and whose cytogenetic studies revealed mosaicism for a deletion of the distal portion of the short arms of the No. 5 chromosome. The patient also demonstrated several congenital abnormalities described in the trisomy 17-18 syndrome.

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# Ovarian Vein Thrombosis: A Rare Cause of Pelvic Pain

## Report of a Case and Review of the Literature

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Miami

When a patient presents with a complaint of pelvic pain the physician must consider many conditions before selecting his diagnosis. One disease which can have a variety of symptoms, including pelvic pain, is thrombosis of the ovarian veins. This condition is only occasionally mentioned in the standard textbooks of gynecology and there are few reviews of this disease in the current literature. The purpose of this report is to describe a patient with ovarian vein thrombosis and to review the literature on the subject.

### CASE REPORT

G. O., a 30-year-old Negro woman para 4135, first presented to the Jackson Memorial Hospital emergency room at 7:00 a.m. on November 25, 1967, complaining of a right lower quadrant nonradiating constant, aching, abdominal pain of five hours' duration. This was accompanied by nausea and vomiting but no other gastrointestinal, genitourinary, or gynecologic symptoms. Her past medical history revealed an episode of streptococcal septicemia in 1957 and a septic incomplete abortion which was treated with antibiotics and curettage in 1958. She had a diagnosis of sickle trait (SA) made by hemoglobin electrophoresis. The patient was allergic to penicillin. Her menses began at the age of twelve years and they occurred regularly every month and lasted for five days. She was currently menstruating and her previous menstrual periods were normal. Her obstetrical history was normal with the exception of the above noted septic abortion. Her youngest child was 3 years old. She was not taking any medications before admission.

The physical examination showed a 122-lb., 63-in. woman in moderate distress with a temperature of 101.6° F.; blood pressure, 110/60 mm. Hg; pulse, 80 per minute; and respiration, 28 per minute. The examination was normal with the exception of the abdominal and pelvic areas. The patient was guarding her abdomen muscles and there was rebound tenderness most marked in the lower right quadrant. The bowel sounds were hypoactive. The vagina had some menstrual blood present and the cervix, uterus, and left adnexa were normal. There was tenderness in the right adnexal area and an adequate evaluation could not be done.

The patient was admitted into the hospital. The laboratory data included a hemoglobin of 13 gm. percent, hematocrit of 38%, and white blood count of 16,600 per cubic millimeter with 94% neutrophils and 6% lymphocytes. The urinalysis was normal and the culture was subsequently reported as sterile. A chest X-ray and BUN were normal and a pregnancy test was negative.

A diagnosis of acute appendicitis was made and a laparotomy was performed. The appendix was found to be normal. There was edema of the right adnexal structures, and the right ovarian veins were dilated and clotted from the ovary to the pelvic brim. The remainder of the pelvic organs appeared normal. The right broad ligament peritoneum was opened and the ovarian vein was ligated near its insertion into the inferior vena cava in an area free from blood clot. A total hysterectomy and bilateral salpingo-oophorectomy was done.

The patient did well postoperatively with the exception of an elevated temperature for six days with the highest reading being 103° F. Blood cultures were sterile and she was treated with broad spectrum antibiotics. She also had a bleeding vessel in the vaginal cuff which was treated by ligature; because of this the patient was not anticoagulated.

The gross appearance of the pathologic specimen showed the uterus, cervix, tubes, and ovaries to be normal. There was the attached mass of thrombosed right ovarian vessels measuring 2 cm. in diameter (see figure). The histologic sections showed a mild infiltration of the endometrium with leukocytes compatible with menstruation. The tubes and ovaries were normal and a corpus luteum was present on the right. The thrombosed vessels contained no evidence of inflammation.

Postoperative blood coagulation studies, including coagulation time, prothrombin time, and platelet count, were normal. The patient was discharged on the twentieth hospital day. She has subsequently been seen in the outpatient clinic and is doing well.

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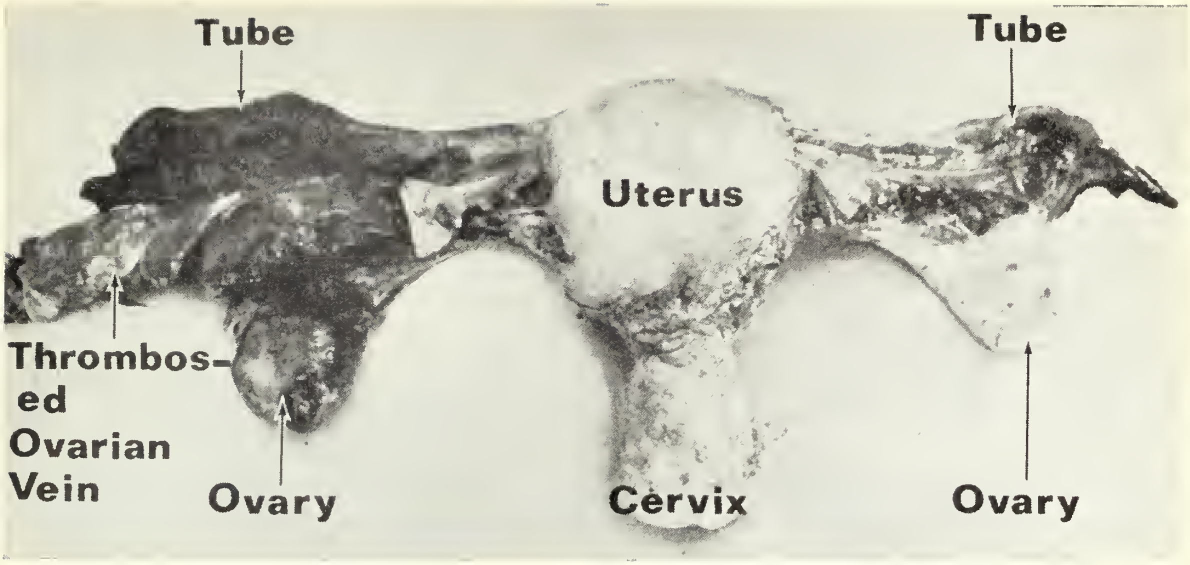

Gross pathologic specimen showing the thrombosed right ovarian veins

### DISCUSSION

The occurrence of isolated ovarian vein thrombosis is quite rare. The first case report was by Austin in 1956.[1] Since that time there have been 7 additional reports on 10 patients.[2–8] All of these occurred during pregnancy or in the immediate postpartum period.

The etiology of this disease is unknown. Two associated conditions are pelvic infection and pregnancy. Pelvic infection with subsequent infection of the pelvic veins can damage the endothelium and create a site for thrombosis. Thus, thrombosis of the pelvic veins, including the ovarian veins, occurs commonly where diffuse suppurative pelvic infection and thrombophlebitis is present. In one series ovarian vein thrombosis occurred in 64% of 70 cases of pelvic infection.[9] Pregnancy is also commonly associated with this condition. The ovarian vein capacity is increased more than 6 times during pregnancy.[10] The resulting postpartum pelvic vein blood stasis may be a causal factor. The altered blood coagulation factors occurring during pregnancy also cannot be disregarded.[11] A rare potential cause maybe the injection of the ovarian veins with contrast media during the performance of a hysterosalpingogram.[12]

The major symptoms of this disease are those of pelvic pain and tenderness. If vein infection is also present there is an associated fever and leukocytosis. It has been known for many years that ovarian vein disease may produce pain.[13] Several of the reported cases of ovarian vein thrombosis were diagnosed as being acute appendicitis before laparotomy.[1,3,8] This diagnosis must be considered in the differential diagnosis of the pelvic pain syndrome along with pelvic inflammatory disease, torsion of ovarian cysts, ectopic pregnancy, pyelitis, ureterolithiasis, appendicitis, diverticulitis, conversion reaction, and others. There is no absolute way of making the diagnosis preoperatively. Occasionally the clot extends into the inferior vena cava on the right, or the renal vein on the left, and if so, it must be cautiously removed. Ligation of these major veins has long been recommended if septic embolization is occurring.[14] Following surgery anticoagulation is frequently done.

The patient reported here is unique in that her ovarian vein thrombosis was unrelated to pregnancy, oral contraceptive treatment, pelvic infection, or a clotting disorder. No etiology was discovered for her disease. She had a preoperative syndrome and diagnosis of acute appendicitis which is not unusual with this disease. The patient was managed by surgical excision of the thrombosed veins. Since she had completed her childbearing and since an obvious etiology for her problem was not apparent at the time of surgery, a hysterectomy and bilateral salpingo-oophorectomy was also performed. Since there was a problem of bleeding from the vaginal cuff in the immediate postoperative period, the patient was not treated with anticoagulants.

### SUMMARY

An unusual case of ovarian vein thrombosis occurring in a nonpregnant woman is reported. The etiology, diagnosis, and management of this condition is discussed.

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*Series on* DISEASES OF THE SKIN

# Lichen Planus

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LICHEN PLANUS is an inflammatory disease of the skin and mucous membranes characterized by an eruption of glistening, flat-surfaced, violaceous papules having a variable course and associated with more or less itching. The primary lesion is usually diagnostic. The papules vary in size from 1 to 3 mm. and occasionally are delled. A white reticulated meshwork may frequently be observed on the surface (Wickham's veil). Discrete lesions are usually present, although many of the papules coalesce to form scaly patches of various sizes and shapes. Gyrate, annular, or linear configurations are frequent. Vesicles are extremely rare. Pigmentation may persist for several months after the cutaneous lesions have undergone involution. Verrucous plaques, which are chronic and resistant to treatment, appear sometimes on the anterior aspects of the legs. In contrast, cutaneous atrophy may occur occasionally. When the lesions occur on the mucous membranes they have a different appearance. Instead of the characteristic violaceous color which is seen on the glabrous skin, the mucosal lesions are white papules which form annular, linear, or reticulated patterns. Ulceration is unusual.

The areas of predilection are the flexural surfaces of the forearms and wrists, inner portions of the thighs, shins, ankles, trunk, and genitals, especially of the male. The face and scalp are involved rarely, although occasionally lesions may be seen on the eyelids. If the latter are affected there may be reticulated pigmentation. The mucous membranes are implicated in about 25% of the cases, especially the lips, tongue, and buccal mucosa. Lesions have occasionally been demonstrated on or beneath the nails.

As a rule, itching is a prominent symptom and is often severe in the acute cases, although it may be absent in the chronic forms.

It is impossible to predict the duration of the disease with any degree of certainty. The course of chronic lichen planus is measured in months rather than in weeks. In general, the more acute the case the more quickly the lesions undergo involution. Regardless of the type of treatment, disappearance of the eruption is usually slow and, contrary to former opinion, relapses are frequent.

Treatment is unsatisfactory. In acute generalized cases corticosteroids administered orally or parenterally are helpful. The topical use of these drugs in ointments, creams, or lotions is useful. Compounds of bismuth and mercury, which were used frequently in the past, have little value.

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*Profile of*

# Dr. John E. Harris

## Professor of Ophthalmology, *The University of Minnesota Medical School*

KENNETH C. SWAN, M.D.

Portland, Oregon

By being "... all things to all men" Paul sought acceptance by the peoples of the Biblical world. It is difficult to conceive of an individual who could be all things to all men in the diverse and multidisciplinary fields of education, research, practice, and ancillary health activities which form the great complex of modern medicine.

However, there are a few men who, without aspiration to be liked by everyone, are—on the basis of their achievements, experiences, interests, and personal qualifications—admired and accepted as members of nearly all sectors of the medical community. These men do not seek to impress their ideas upon others, but their influence generally is great because, in addition to having friends in many areas and disciplines, their knowledge and abilities are recognized so that they are sought for positions of leadership. They serve on the faculties of medical schools, as officers of scientific and medical societies, as members of policy-making committees, and as consultants for federal agencies and private foundations.

Dr. John E. Harris is one of these men, as evidenced by the number of responsible positions to which he has been appointed. As professor of ophthalmology at the University of Minnesota Medical School, he has reorganized the department's teaching and patient-care programs; also, he has established a research laboratory which has excellent facilities, equipment, and staff. Dr. Harris has just completed a six-year term as a trustee of the Association for Research in Ophthalmology, serving as chairman during his last year. He has been an associate editor of the *Archives of Ophthalmology* and now is on the editorial board of *Investigative Ophthalmology*. He has served the National Institutes of Health in several capacities. He was a member of the Sensory Diseases and Visual Sciences Study Sections of the Division of Research Grants and was chairman of the Vision Training Committee and is now on the Advisory Council of the National Institute of Neurological Diseases and Blindness. In addition to these time-consuming responsibilities, Dr. Harris has continued to contribute to the scientific programs of the national societies and postgraduate meetings in ophthalmology. He somehow has found time to be active in community service. In Minnesota, he is chairman of the Preschool Medical Survey of Vision and Hearing and is medical advisor and administrator of the Lion's Eye Bank. He also serves on University of Minnesota committees. Few of the duties and responsibilities listed above are of the type which can be delegated to others. How did John Harris acquire the capabilities to do so much so well? Many years dedicated to study is one of the answers.

John E. Harris was born in Toledo, Ohio, on Dec. 27, 1913. He received his elementary and secondary education there and graduated from the University of Toledo in 1935 with a major in

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KENNETH C. SWAN *is from the John E. Weeks Institute of Ophthalmology of the University of Oregon Medical School, Portland.*

chemistry. He then entered the graduate school of the State University of Iowa where he received his Ph.D. in biochemistry in 1940. John Harris, as a graduate student, and I, as a resident in ophthalmology, often worked nights and weekends in adjacent laboratories in an isolated corner of the University Hospital. He had a good-natured acceptance of the circumstances, a tolerance of his associates, and an enthusiasm for his research which was conducive both to a friendly atmosphere and to sound investigative work. Recognition of his research came early. An exhibit concerning the biochemical aspects of blood preservation was awarded the Gold Medal at the 1939 meeting of the American Medical Association to John Harris and his associates, Robert Hardin and Elmer de Gowan.

Dr. Harris was appointed a research fellow by the National Research Council in 1941, which permitted him to spend a year at the University of Pennsylvania working with Henry M. Jacobs on cation transport in the erythrocyte. During the war years, he served in the Air Corps as an aviation physiologist and was discharged with the rank of major. By that time, I had returned to Oregon as chairman of the Department of Ophthalmology. When I heard that Dr. Harris wished to continue in biomedical research and teaching, I encouraged him to join the faculty of the Ophthalmology Department so that he could continue his investigative work while studying medicine. During the period from 1946 until he received his medical degree in 1950, Dr. Harris continued to concentrate his efforts on the mechanisms of cation transport with special reference to the crystalline lens. Even then, he was applying a philosophy which he has continued to teach to young investigators, that is, he employed basic science techniques to study the normal and diseased eye and, in return, contributed to the basic science fields the lessons learned from the unique investigative opportunities offered by the highly specialized ocular tissues. A paper which he presented at the 1950 national meeting of the Association for Research in Ophthalmology was selected as the outstanding paper at that meeting. In spite of devoting considerable time to an active research program, John Harris had the outstanding scholastic record of his medical student class and was elected to Alpha Omega Alpha in his junior year.

He interned at Walter Reed Army Hospital and then returned to the University of Oregon Medical School to continue his research and to complete clinical training in ophthalmology. In 1951, he became the first Markle Scholar in Medicine to be appointed from the University of Oregon Medical School faculty. As associate professor, he made important contributions to the establishment of the John E. Weeks Institute for the Advancement of Ophthalmology and to the organization of the John E. Weeks Memorial Laboratory. Fundamental research conducted in this laboratory formed the basis for the first Jonas Friedenwald Memorial Lecture in Ophthalmology, which Dr. Harris presented in June of 1957. In his remarks on acceptance of the Friedenwald Memorial Plaque, he expressed the importance of a close interrelationship of ophthalmology not only to other clinical fields but also to the basic sciences. He discussed the responsibility of ophthalmology in the education of medical students, expressing the belief that undergraduate instruction gains considerably from the teaching of a specialty like ophthalomology "if it is approached from the point of view that seemingly diverse diseases affecting individual systems represent a common biochemical or physiologic fault at the cellular level." In his graduate and postgraduate teaching at Minnesota, Dr. Harris has continued to apply the principle which he first expressed formally in accepting the Friedenwald Award, that is, "The emphasis of clinical practice in ophthalmology must be built on a sound understanding of basic principles of physiology and biochemistry and their pathological alterations." Contributing to this sound knowledge, as well as teaching and practicing accordingly, has required extra years of study and preparation—years which most men devote to earning income.

Mrs. Swan and I had the opportunity to share with Dr. and Mrs. Harris some of those pleasant extra years of preparation and low income as well as some of the later years when both families became more secure. John Harris met Bessie Hatherly at the University of Toledo. They were married in 1938 and moved to the State University of Iowa where both continued their studies as graduate students, Dr. Harris in biochemistry and Mrs. Harris in social sciences. Mrs. Harris has continued her interest in social problems and has been active in community service in Minnesota. In our minds, John and Bessie Harris have seemed inseparable; somehow, they have found a formula for unifying into one family endeavor increasingly demanding professional activities, the establishment of a home, and the rearing of three sons. Their younger two, John and Gregory, are students, and their oldest, Michael, is a married businessman with one son.

# *Book Reviews . . .*

## The Palms and Soles in Medicine

*by* MAURICE J. COSTELLO, M.D., *and* RICHARD C. GIBBS, M.D., *edited by* ARTHUR C. CURTIS, M.D., *686 pp., ill., Charles C Thomas, Springfield, Ill., 1967. $47.50*

This large volume containing over 600 pages is a monograph in the American Lectures Series in Dermatology. It is edited by Dr. Arthur C. Curtis. The book is published after the death of Dr. Maurice J. Costello, the senior author, so one assumes that much of the work was done by him and Dr. Gibbs. Acknowledgement is made to a large number of medical men for their help, advice, and editing of various sections in the book.

The book is an ambitious effort to cover most if not all of the conditions affecting the palms and soles in medicine, be it in dermatology or in related medical specialties. The dust cover describes it as a comprehensive work on a neglected subject. It hopes to include "all cutaneous conditions that localize on the palms and soles, whether exclusively, by predilection, by accident or as part of more extensive processes involving other organs or the body as a whole." The introductory material covers the embryology, gross anatomy, and histology of the palms and soles along with a discussion of dermatoglyphics and its relationship to certain birth defects. Chapters are divided into conditions that are commonly found on the palms and adjacent tissues, those found on the soles and adjacent tissues, and those commonly found on both the palms and soles and adjacent tissues. Later chapters deal with cutaneous conditions involving the palms and soles related to generalized dermatoses or dermatitides. There are also sections on pigmentary abnormalities of the palms and soles as well as alterations in sweating of the palms and soles.

One can appreciate that an effort to classify cutaneous conditions on an anatomic basis, particularly when it is confined to special areas, can be a difficult subject. The organization on a whole is quite good despite this handicap. It is true at times one may find conditions arranged in particular chapters that may not seem closely related until one realizes that certain anatomic changes or microscopic changes bring them together. There are other instances, of course, in which etiologic factors are the binding substance.

There are numerous illustrations, and in most instances they are good. There are some cases in which the illustrations fail to show the salient features that one would desire. On the other hand, it is difficult to organize a book with as many illustrations as this has without missing some points, particularly when the illustrations are in black and white. There is an additional color atlas in the back of the book that is well worthwhile. In addition to material related to man, there is one chapter on keratotic conditions of the weight-bearing surfaces of animals that is limited in its scope but interesting. The very extensive bibliography and author index of bibliography is of great value to the individual seeking to study the conditions in greater detail.

The book cannot help but be a valuable addition to one's medical library, particularly if he is a dermatologist.

I. FISHER, M.D.
*Minneapolis*

## Roentgenographic Diagnosis of Bladder Tumors

*by* ERICH K. LANG, M.D., *119 pp., ill., Charles C Thomas, Springfield, Ill., 1967. $9.75*

The purpose of the book was to investigate the reliability of special roentgenographic studies in the diagnosis of bladder tumors. The book is based on 680 consecutive bladder tumors with correlation of the roentgenographic, arteriographic, pathologic, and clinical findings. The author found that arteriographic and roentgenographic staging of infiltration and histologic differentiation is accurate.

The book is well arranged with chapters on pathology, staging of tumors, anatomy, standard X-ray examinations, superimposition cystography, perivesical venography and inferior vena cavography, lymphangiography, and arteriography.

The illustrations are excellent. This book is not designed for the general physician but should be required reading for every urologist and radiologist dealing with bladder tumors. It would be especially valuable to residents since the techniques of the various special procedures are well presented.

R. M. BERG, M.D.
*Bismarck, North Dakota*

## Rare Diseases and Lesions: Their Contributions to Clinical Medicine

*by* WILLIAM B. BEAN, M.D., *290 pp., Charles C Thomas, Springfield, Ill., 1967. $10.50*

Dr. Bean, who prepared this book as a requirement for being the recipient of the Beaumont Lectureship, writes well. As he indicated in his preface, he chose to discuss diseases and disorders that interested him and the amount of space accordingly devoted to those that captured his greatest ardor is disporportionally represented. There are surely in excess of 250 conditions which have been described, often in a lively manner with meaningful digressions into Dr. Bean's personal experiences with patients having these afflictions.

Unfortunately, no illustrations accompany the text and typographical errors are generously laced throughout. Perhaps the most disconcerting aspect to this reviewer was the plethora of factual peccadillos. To illustrate, this reviewer would doubt the presence of osteomatosis of "the neck" in Gardner's syndrome (p. 20). The medullated corneal nerve fibers discussed under neurofibromatosis (p. 22) are part of the syndrome of multiple mucosal neuromas, medullar carcinoma of the thyroid, and pheochromocytoma.

This reviewer cannot accept the statement that "tuberous sclerosis is likely to be associated with rhabdomyosarcoma" (p. 77). Neither can he believe that there is any association between cleft lip palate and Hurler's syndrome (p. 92). Dr. Bean's comments would suggest that he is not familiar with the excretion of keratosulfate in the urine of individuals with Morquio's disease (p. 94). Bogorad's name is connected with gustatory lacrimation, not gustatory sweating (p. 154). The tearing associated with Bell's palsy is not related to the crocodile

(Continued on page 11A)

# The Divorced Depressive: "Forty, Forgotten

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(Continued from page 7A)

tear syndrome but results from ectropion which allows tears to flow out of the conjunctival sac (p. 156). Mandibulofacial dysostosis is certainly not associated with "agenesis of the mandible" (p. 177).

Dr. Bean has often been careless in discussion of the genetic aspects of many of these disorders. He often labels a disease as familial, a term which is quite useless. (One could call measles familial and be correct!) To cite a few examples: Pseudoxanthoma elasticum is surely autosomal recessive (p. 22) and infantile cortical hyperostosis appears to be transmitted as an autosomal dominant trait (p. 55). Orofacial digital syndrome is inherited as X-linked dominant, lethal in the male (p. 57). Nail-patella syndrome (p. 58) is autosomal dominant as are multiple glomus tumors (p. 65). Homocystinuria is autosomal recessive (p. 125).

Although some attempt was made in grouping diseases (bleeding disorders of the gut, angiomatoses, bone disorders, carcinomatous syndromes, and so forth), at least a third of the book considers miscellaneous disorders often with disturbing brevity.

The epilogue is devoted to "Namemanship," a delightful dissertation on how diseases are designated.

ROBERT J. GORLIN, D.D.S., M.S.
*Minneapolis*

### Anatomy and Surgery of Hernia

*by* LEO M. ZIMMERMAN, M.D., and BARRY J. ANSON, PH.D., *2d ed., 368 pp., ill., Williams & Wilkins Co., Baltimore, 1967. $17.25*

This book resulted from a collaboration by a singularly qualified professor of anatomy and an experienced professor of surgery. Its greater weight is given to studies of the anatomical aberrations that lead to inguinal, femoral, and ventral wall hernias, and therefore, hopefully, to the proper surgery for reconstruction of the breached area. Additionally, there is an excellent chapter on the esoteric pelvic hernias. Chapters on internal hernias fill out the book.

The anatomic studies by Professor Anson, as they pertain to abdominal wall and pelvic hernias, are profusely illustrated, there being approximately 89 plates. Since these plates are quite complex and text relating to anatomy very detailed, intense and continuing concentration is required from the reader to maintain a grasp of the thesis.

Based on the aforementioned studies, Dr. Zimmerman details the operations that he believes best suited to the correction of inguinal, femoral, and other ventral hernias. The details of these procedures are well illustrated and easily followed and should be part of the repertoire of all herniologists. Of particular interest is his description of femoral hernia repair. And, of course, those familiar with the first edition of this book have long appreciated his clarification and advice on the mending of sliding inguinal hernia. A particularly good section is presented on lateral ventral (Spigelian) hernia.

It is ironic that McVay, who did much graduate work with Anson, should derive from that association interests in inguinal herniorrhaphy procedures far removed from Zimmerman's.

In the section concerned with the history of hernia,

(Continued on page 13A)

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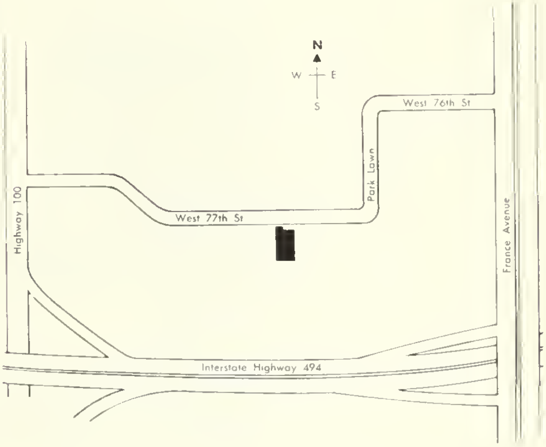

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(Continued from page 11A)

just credit is given to the superb pioneer work of the American, H. O. Marcy, who is so often distressingly neglected.

This is not a textbook for the medical student; but it is a valuable reference and source book for the occasional surgeon and for those who, operating frequently, are constantly striving to lower their five-year recurrence rate.

The frequent complaint of new editions having had inadequate proofreading is again in order.

RICHARD J. WEBBER, M.D.
EARL G. YONEHIRO, M.D.
*Minneapolis*

## Atlas of Urologic Surgery

*by* PHILIP R. ROEN, M.D., *394 pp., ill., Appleton-Century-Crofts, New York City, 1967. $23.50*

This book represents a monumental and costly endeavor by the author as well as by the illustrator. It is recommended both to urological residents and to those who perform urological operations less often.

There are concise, well illustrated presentations of pertinent anatomy and of conventional incisions. Pre- and postoperative care are discussed briefly, and most urological operations are both described and illustrated.

However, no one can give birth to a book, particularly of a technical nature, which will satisfy everyone; the reviewer offers what he hopes are constructive criticisms.

Missing is a bibliography which would encourage a reader to learn of useful variants of and alternatives to the operations which are presented.

The section on transurethral prostatic resection would be better if it included means of hemostasis in addition to simple fulguration. There is no mention of perineal urethrotomy to circumvent a small or strictured urethra, of hyponatremia, nor of control of inadvertent stimulation of the obturator nerve. I cannot believe that rupture of the bladder is a common complication of transurethral resection except in inexperienced hands; however, the method of avoiding intravesical explosions deserves mention.

The short section entitled "Lithopaxy" should be entitled "Litholapaxy," and should show and discuss something more than the Ravich lithotriptoscope, which is useful only for small, soft stones. Many share my preference for the Keyes lithotrite and doubt that the presence of a stone in the bladder is a contraindication to transurethral resection.

Since transurethral procedures are presented, one would like to see something on the cystoscopic extraction of ureteral calculi.

The discussion of epispadias would be improved by a description of methods of dropping the penis into a more normal position.

Since no one operation for straightening the hypospadiac penis will serve every purpose, some alternative procedures deserve recognition.

The illustrations of cutaneous vesicostomy show a skin flap with square corners, a violation of basic principles.

I would say "By all means read it, but supplement it with other works."

C. D. CREEVY, M.D.
*Minneapolis*

## Pulmonary Insufficiency and Respiratory Failure

*by* GILES F. FILLEY, M.D., *162 pp., ill., Lea & Febiger, Philadelphia, 1967. $7*

The fact that so few vitalometers are found in doctors' offices serves to point out that all too few doctors are familiar enough with its function and clinical applicability. This small book (162 pages) is an excellent introduction to pulmonary function, rather malfunction, in the diseased state. The reader is not besieged with a mass of figures in technical jargon, yet a basis for clinical understanding of the diseased lung is well laid down.

Basic in its approach, the opening chapter discusses the evaluation of cough and sputum, pointing out, for example, that there is no such thing as a "normal cough." He also debunks a commonly held belief that the "cough comes from my sinuses." From here the author quickly gets into generalized obstruction of the airways, its recognition, and clinical and diagnostic significance. A brief discussion clearly points out the clinical application of some of the more commonly used pulmonary function tests using a recording spirometer. For office screening the reviewer prefers a spirometer with a direct dial reading of the total and timed vital capacities—its simplicity is more apt to insure its routine use, particularly in the age groups beyond forty.

Several small tables compactly illustrate pathophysiologic classifications with signs, symptoms, and clinical examples. Disease entities with differentiating characteristics, helpful diagnostic criteria, and specific treatment are prevalent. The chapters on chronic $CO_2$ retention,

(Continued on page 14A)

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(Continued from page 13A)

acute respiratory acidosis, hypoxemia, and hypoxia are to be commended for its ease in giving understanding to arterial pH changes and the importance of $CO_2$ and $O_2$ determinations in following and handling respiratory failure. Critical factors are emphasized.

One criticism: The appendix listing the normal values for maximum breathing capacity, one-second vital capacity, maximum midexpiratory flow rate, and vital capacity has a complicated formula which must be applied to every patient. If one had to use this it would discourage the office use of the spirometer. Fortunately, Boren, Kory, and Syner's nomogram (Amer. J. Med. 41:106, 1966) is available and supplies the answers almost at a glance. Aside from this the author succeeds admirably in his aim which was "brevity and simplicity of statement [in pursuing] the ideas evolved from considering how the clinical manifestations of disease of the lung can be interpreted physiologically."

EARL T. OPSTAD, M.D.
*Minneapolis*

## Learning Medical Terminology Step by Step

*by* CLARA GENE YOUNG *and* JAMES D. BARGER, M.D., *327 pp., ill., C. V. Mosby Co., St. Louis, 1967. $7.50*

This is a clear, well written text which is well suited as a supplement for introductory anatomy or nursing courses. The introductory definitions and explanations of prefixes, suffixes, verbs and adjectives, and root meanings of medical terms should be very helpful to the beginning student. Too frequently these meanings are glossed over and the student never achieves a firm grasp of them. This text aids in overcoming this problem.

Each chapter closes with a helpful glossary of terms both covered in the chapter and additional terms and definitions which will be useful in the trainees' profession. In addition to the glossary, pathological and related areas of interest are listed which are pertinent to the particular chapter.

The text is organized around the study of the human body. Beginning with the cellular and histological level, correlation is made with anatomic, physiological, and pathological aspects. Each of the four tissue systems is included and the terminology is carefully and clearly presented. The various organ systems are also well covered in an introductory manner.

The closing chapters deal with practical applications including laboratory investigations, definitions of commonly encountered abbreviations and symbols, exercises with hospital reports, and introductory approaches to medical insurance claims. The inclusion of these areas in an introductory text should enable the student to retain it for future reference in his or her profession.

There are few illustrations, and the ones present are in black and white. More illustrations would be helpful, but might make the text too bulky, more expensive, and less easily used. This lack of illustrations lends the text to be more of a good elementary reference which could be used along with a more illustrated text.

I feel the conciseness and clarity of presentation plus the above cited reasons recommends this as a very useful book for the elementary student and would form a helpful part of his professional library.

DAVID KVISTBERG, PH.D.
*Minneapolis*

## The Principles of Medical Computing

*by* THOMAS R. TAYLOR, M.B., *168 pp., ill., 1st ed., F. A. Davis Co., Philadelphia, 1967. $7*

The ability of the medical profession to effectively and efficiently render health care services is directly related to the factors of personnel and facilities. To meet the increasing demands for health care by altering the factor of personnel would require both an increase in the number of professional and nonprofessional persons in the health occupations and an improvement of the skills and talents of these people. Many factors limit the accomplishment of these results. However, increased health services can be achieved by increasing the available space for rendering medical services and by vastly improving the technological skills within that allotted space. The established potential of computers establishes this technological equipment as a high priority tool for the entire medical profession. This book concisely defines the basic, but nontechnical features of computer operation and potential application to medical records, administration, laboratories, and research. The author clearly defines the limitations of poorly programmed computer methods, the relatively slow systems for input and output, and the essential human factor in achieving maximum results. For the person not acquainted with the technical details of electronics and even lacking major mathematical training, this book offers a good preliminary indoctrination into the fundamental principles and potential applications of computers in general and selected areas of medical services.

WYMAN E. JACOBSON, M.D.
*Minneapolis*

## Renal Failure: A Symposium Sponsored by Hahnemann Medical College

*edited by* ALBERT N. BREST, M.D., *and* JOHN H. MOYER, M.D., *295 pp., ill., J. B. Lippincott Co., Philadelphia, 1968. $17*

Drs. Brest and Moyer, along with 45 contributing authorities in the field of renal disease, have put together a short but very comprehensive monograph on the physiology, diagnosis, and management of renal failure. The book is divided into 5 parts with a total of 35 chapters. Parts 1 and 2 deal with the normal anatomy and physiology of the kidney and the pathophysiology of kidney failure. Part 3 discusses the diagnosis and clinical manifestations of chronic renal failure, Part 4, the treatment of chronic renal failure, and Part 5, the pathogenesis and treatment of acute renal failure. In the treatment of chronic renal failure there is extensive discussion of the use of peritoneal and Kiil dialysis. The text is well written, clear, and profusely illustrated with tables and figures. Key references to the literature are listed at the end of each chapter.

The book is a comprehensive discussion of all aspects of renal failure and is not difficult reading for the physician who is not working in the field of renal disease. It will make an excellent reference text for the renologist and a practical educational and reference source for the practicing physician.

ALVIN L. SCHULTZ, M.D.
*Minneapolis*

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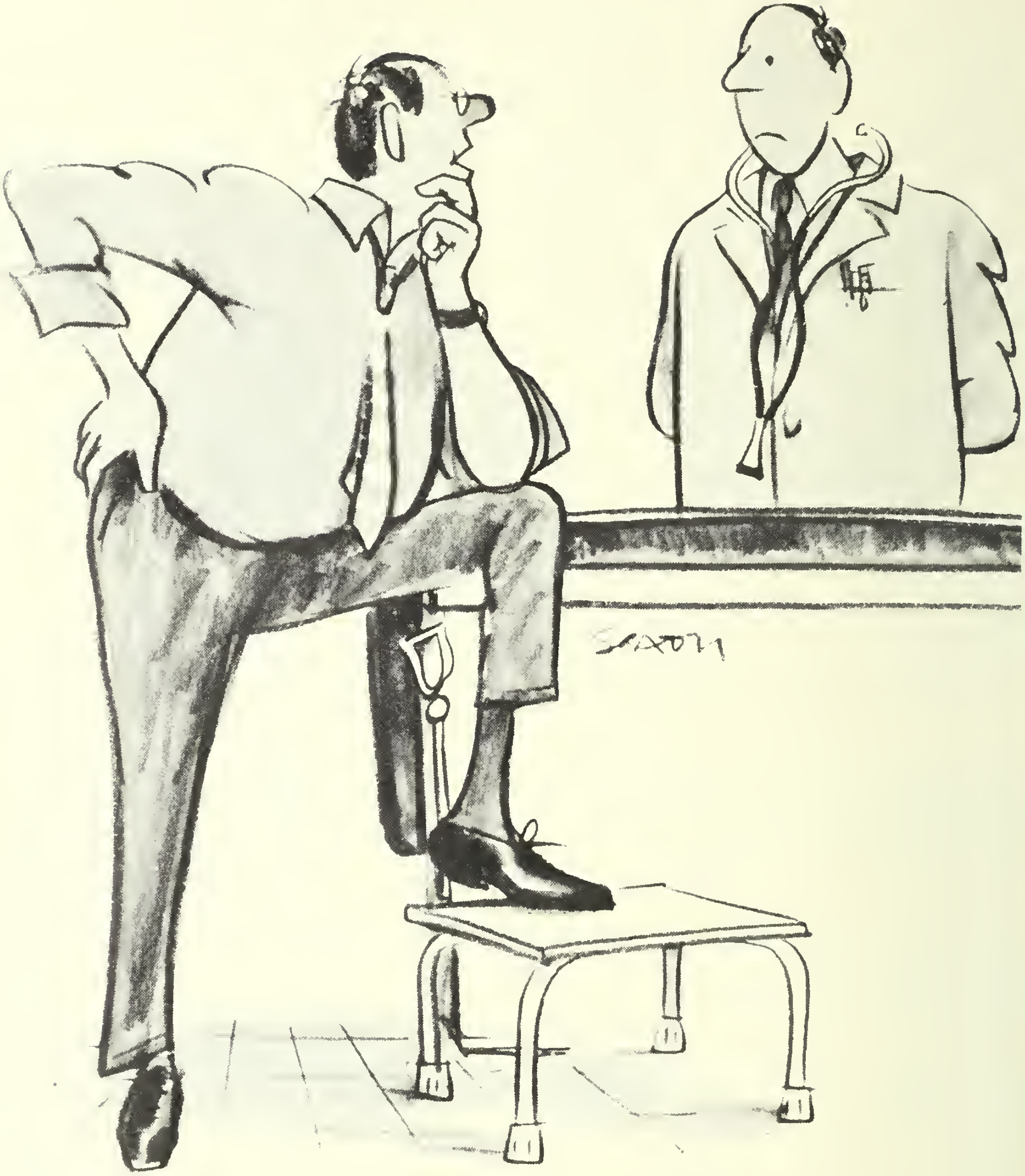

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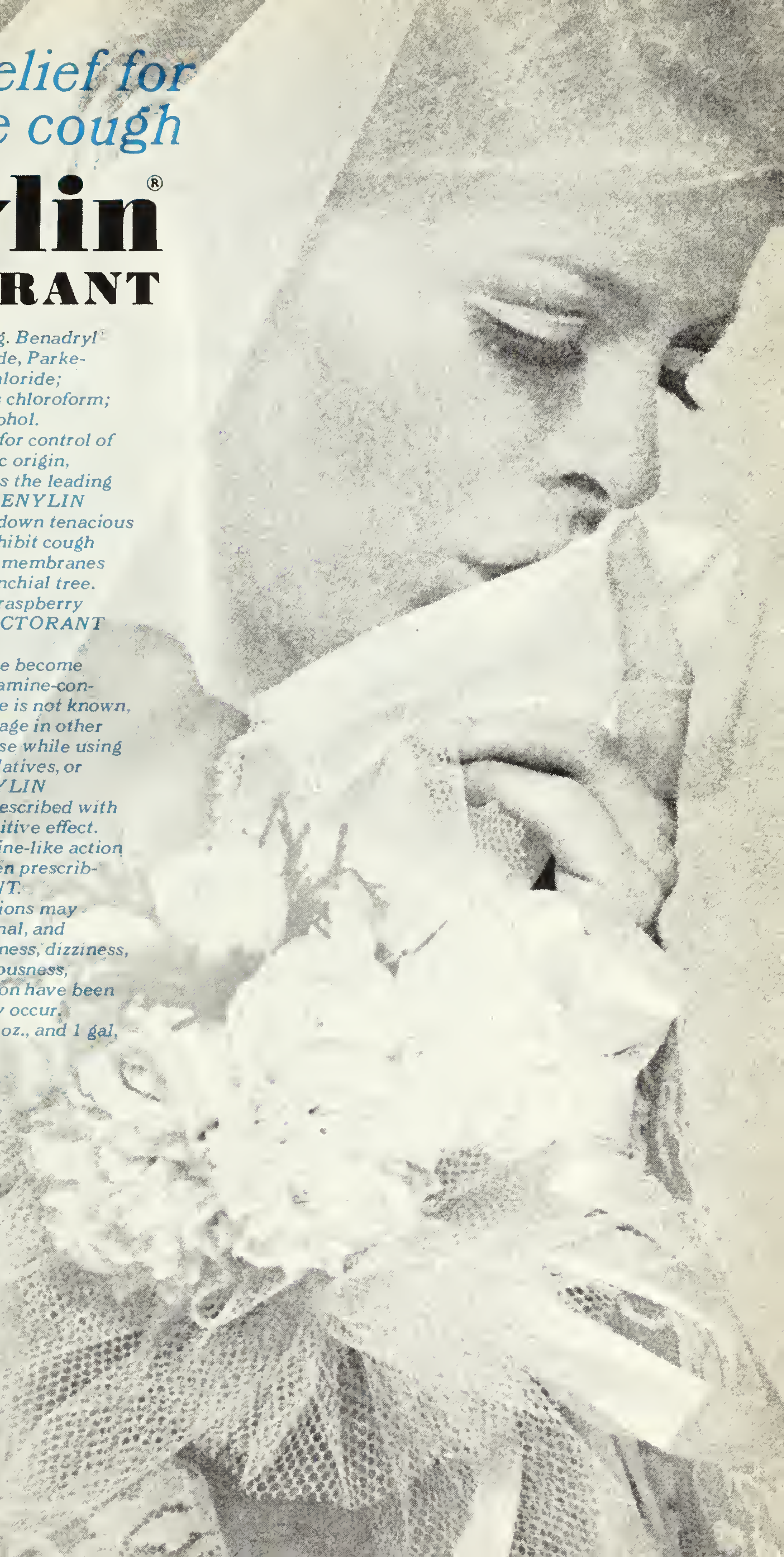

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# Tissue Transplantation Studies in Dermal Grafts

## Results of a 17 Year Study

J. ORDIE SHAFFER, M.D.

Hayward, California

ONE OF THE EARLY published papers of Dr. O. H. Wangensteen[1] in 1930 was on cutaneous implantation grafts and their success in the presence of difficult local conditions. This work underscored the possibility of cutaneous elements doing an important surgical task if used properly. The past seventeen years of experimental and clinical work on the deep layer of the skin, the dermis, has shown it to be superior in many reinforcing roles to the extraneous reinforcing agents such as metallic plates or filigrees, such as Dacron, nylon, or Marlex mesh. Dermal grafts have also proved superior to fascia or to whole skin in a variety of roles. Although homologous transplants and synthetic prostheses are useful, none of these will become the strong, viable, integral fused part of the body that a dermal graft becomes.

A dermal graft was first used in the reinforcement of a hernia by Loewe[2] in 1913. He reported its successful use in 6 cases, including 4 inguinal herniorrhaphies, 1 umbilical herniorrhaphy, and 1 tendon repair. Since that time it has been used sporadically, but it has not received the use that it deserves. Fascia has frequently been used because of the ease with which a large fascial graft can be obtained from the lateral thigh. Fascia has the decided drawback, however, of having only unidirectional

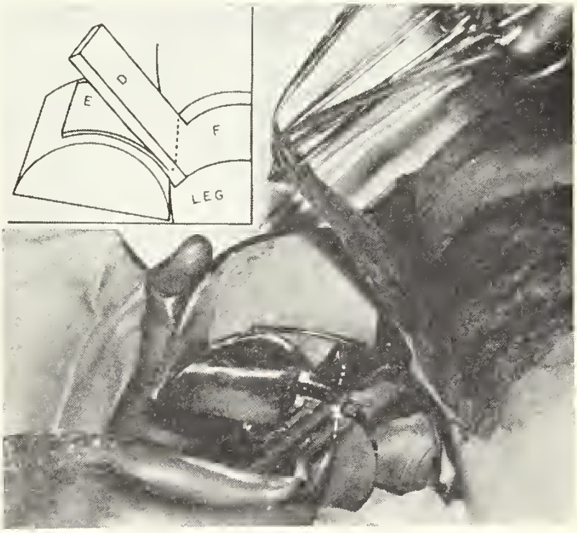

Fig. 1. Split split-flap dermatome technique. Dermis (D) being held up after separation from the subcutaneous fat (F) by the first cut and from the epidermis (E) by the second cut. Dermis is cut along dotted line and used to reinforce hernia repair; epithelium (E) is resutured back over graft site.

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DR. SHAFFER *is attending surgeon at Eden Hospital, Hayward, Calif.*

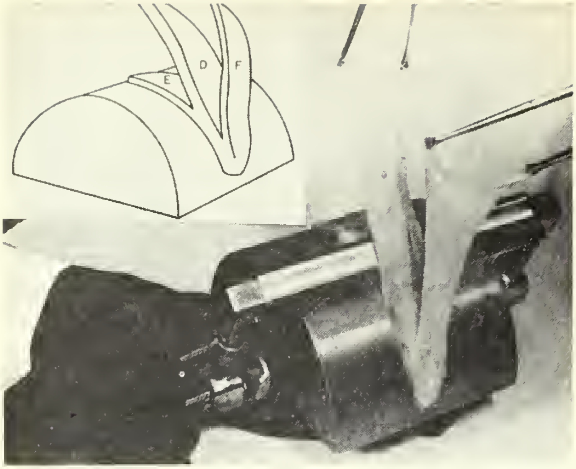

Fig. 2. Split split-free dermal graft technique. The skin ellipse has been separated into subcutaneous fat (F), dermis (D), and epidermis (E) by the two cuts.

strength, as anyone who has pulled laterally on a fascial graft can testify. A dermal graft, on the other hand, has a multidirectional strength that is stronger in either plane than fascia. The reticence to use dermis stems from technical difficulties in obtaining a dermal graft with two uniform sides with the superficial epidermis removed. A satisfactory technical method for this was previously reported in 1952 by the split-split flap technique.[3]

In this technique, a Padgett dermatome is used to cut a deep skin flap (approximately 34/1000 of an inch for an adult), and with the skin left attached, the blade is drawn back to within ¼ in. of the starting edge of the flap. The knife is lowered to 12/1000 of an inch from the drum and the free dermal graft excised. The attached skin flap is then resutured over the donor site (Fig. 1). If the skin adjacent to the main surgical incision is of good quality, an elliptical segment may be excised and the split-split technique again used with the superficial epithelium being discarded (Fig. 2). The dermal graft is then used in the wall of the canal in a Cooper ligament repair and the external oblique sutured over the graft in the inguinal hernia repair. In massive ventral herniorrhaphies, a one-layer closure with interrupted silk sutures from inside the sac is effected, and the dermal graft is used as an onlay for reinforcement. The subcutaneous fat is then sutured down to the graft to obliterate all dead space.

Previously, several workers, including Mair[4] and Strahan,[5] had advocated whole skin to obviate the technical difficulties of obtaining dermal graft. However, a personal study that was done with multiple isometric studies on skin and dermal grafts in different sexes and age groups of both human and dog skin and dermis revealed that over 90% of the tissue strength was in the dermis, so that no appreciable loss of strength occurred with the removal of the superficial epithelium. The three main factors favoring dermis over whole skin are [1] greater freedom from infection using the dermis, [2] absence of tissue sequestration resulting in better fusion with surrounding tissues, and [3] elimination of any danger of cyst formation by using dermal grafts sutured under tension.

To check the bacterial potential of whole skin and dermis, five specimens of unimplanted dermis were ground with aseptic precautions, and four of these were sterile to culture. A mixed bacterial culture was present in the fifth specimen. The whole skin was prepared with a three-minute scrubbing with tincture green soap followed by alcohol, ether, and tincture of benzalkonium (Zephirin®). Finally, a second application of ether was used to remove all antiseptic. All five of the specimens gave mixed cultures, indicating the futility of trying to sterilize the superficial skin. It was also seen that the dermis is usually sterile and maintains such sterility, which aids in its fusion to the surrounding

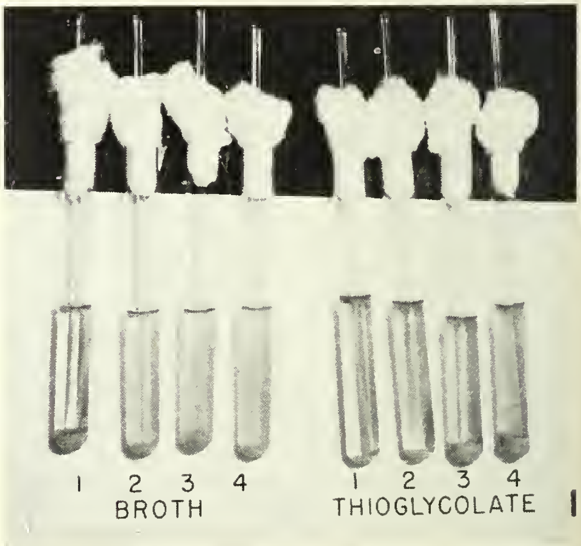

Fig. 3. Broth and thioglycolate cultures of biopsies of dermis and whole skin graft previously weighed in autoclaved vials and then crushed and ground with a sterile glass rod with washed and autoclaved sand in the bottom to aid in grinding. [1] Dermis implanted with tension, [2] dermis implanted without tension, [3] whole skin implanted with tension, and [4] whole skin implanted without tension. Note only the dermis with tension (1) is sterile (clearest tube). The whole skin without tension is most turbid with growth, illustrating the superiority of dermis for implantation and the importance of suturing the tissue under tension.

tissues. The absence of any necrosis in the dermis also promotes healing, whereas the necrosis of the superficial epithelium of whole skin may delay healing.

In 9 of 25 cases in a previously reported controlled experimental study of 25 dogs on the comparative merits of whole skin and dermal grafts in the repair of hernias,[6] a firm fusion between the epithelial side of the whole skin and the adjacent tissue had not occurred because of sequestration of the superficial epithelium, whereas all dermal grafts sutured under tension fused with both sides of the adjacent tissues. Tension studies on dermal and skin transplant revealed that both undergo reduction in tissue strength during the first three weeks of implantation. The increase of strength is more marked in tissues implanted under tension after this interval, while the transplants implanted without tension decrease in strength after three weeks. After six weeks the grafts implanted under tension are stronger than those without tension, and dermis implanted under tension is the strongest graft.

Specimens of dermis and of whole skin implanted in different experimental animals and removed at weekly intervals up to three months revealed that gross cysts were common with whole skin implanted without tension (80%) and less frequent in whole skin under tension (45%). Gross cysts were completely absent in dermis but, on microscopic study of the dermal grafts, it was found that 40% implanted without tension had minute cysts.

A subsequent study was done on 10 large nonpregnant dogs and a graft of different type was placed in each of the four abdominal quadrants of the animals. Dermal grafts implanted with and without tension were placed in two of the quadrants and whole skin grafts with and without tension in the other two. Aerobic and anaerobic cultures were taken under sterile conditions of all the grafts of 1 of the 5 animals monthly for five months. An incision was made across each graft and a sterile swab drawn across each site. In each instance, if the graft had fused with the surrounding tissues, the culture was sterile, but with incomplete fusion or necrosis, invariably a mixed bacterial growth was seen. All the dermal grafts implanted under tension were sterile on culture, whereas only 6 of the 10 dermal grafts without tension were sterile. Only 2 of the 10 whole skin grafts under tension and none of the whole skin grafts without tension were sterile. In the last 5 dogs, small biopsies of all 4 types of grafts were taken aseptically and weighed in autoclaved vials. The specimens were then crushed and ground with a sterile glass rod in both beef broth and in thioglycolate cultures with washed, autoclaved sand in the bottom to aid grinding (Fig. 3). The whole skin grafts, both with and without tension, had not fused completely and all had positive bacterial growth. The whole skin implanted without tension appeared grossly to have more infection, but no significant statistical prominence was found over those specimens sutured under tension. After four months both the dermal grafts had fused, but the dermis implanted under tension was more firmly fused than the grafts implanted without tension. All dermal grafts implanted under tension were sterile when tested at one- to five-month intervals, showing the correlation between fusion, sterility, and implantation of the dermal grafts under tension.

Over a seventeen-year period dermal grafts have been used in 61 cases of massive hernias including ventral, recurrent, or large sliding inguinal hernias and diaphragmatic hernias. All the ventral hernias were massive and involved over one-fourth of the abdominal wall. Two cases of infection were present which cleared under therapy. Only one recurrence took place during this period. The one death in the series occurred from the spontaneous rupture of an intracranial aneurysm. In more recent ventral herniorrhaphy cases, continuous catheter suction (hemovac) was used for several days until drainage became negligible.

The transformation of the dermal graft reinforcement into a strong viable connective tissue which firmly fuses with the adjacent tissues gives excellent support to the desired area. The dermal graft is easily obtained by the split split-dermatome technique and is an excellent surgical method for reinforcement of hernias, deserving of continued and more widespread use in the repair of massive and recurrent hernias.

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# Urticaria

CARL W. LAYMON, M.D.
Minneapolis

Urticaria is characterized by transient, red or white, evanescent wheals (welts) which may appear on any part of the body. Large lesions, which may affect the lips, tongue, or periorbital regions, are known as angioneurotic edema. The disorder, though diagnosed easily, frequently presents a perplexing etiologic problem, and since successful treatment usually depends upon removal of the cause, its discovery should be the goal in every case.

Etiologic agents are numerous. Hypersensitivity to foods such as berries, citrus fruits, seafoods, nuts, and chocolate is a common cause of acute urticaria, but only occasionally a factor in the chronic form. The lesions usually appear within twenty-four hours (sometimes sooner) following the ingestion of a food to which the individual is hypersensitive.

The disease may be caused by many medications such as antibiotics (especially penicillin), analgesics, tranquilizers, laxatives, and "sleeping pills." Urticaria is one of the prominent symptoms of serum sickness.

The eruption may be associated with various bacterial, viral, and fungal infections. There have been numerous reports of cases due to infected teeth, tonsils, sinuses, and gallbladders. Among the various constitutional causes which have been associated are constipation, endocrine disorders, renal disease, gout, and nephritis.

Inhalants, such as pollens and animal danders, have been mentioned as causes of urticaria. There may or may not be an association of urticaria with atopic disorders such as hay fever or asthma.

Intestinal parasites (ascaris, hookworm, echinococcus, and so forth) rarely cause chronic urticaria.

Physical agents (mechanical irritation, heat, cold, and light) may produce the disorder. Urticaria factitia (dermographism) is the term which has been applied to urticaria produced by mechanical irritation. The exact causes of the reaction to physical agents are unknown.

Psychoneurogenous factors (the tension makeup, neuroticism, the worry habit, shocks, family and financial troubles, and so forth) are extremely difficult to evaluate.

### COMMENT

Urticaria is frequently refractory to all types of treatment unless the cause is immediately obvious, as in acute cases due to foods. In many instances it is impossible to determine the etiologic factors, and it is necessary to resort to symptomatic therapy. Cutaneous tests are of little or no value in the management of the disorder. Urticaria due to physical agents seems to offer no better prognosis than cases due to other causes. The multiplicity of etiologic agents increases the difficulty in obtaining good response to treatment. Antihistaminic agents and steroids will prove successful or at least yield improvement in most cases, although there are certain ones which defy all analysis in which the results are poor.

---

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# Thymoma Associated with an Unusual Multisystem Disorder

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THYMOMAS ASSOCIATED WITH a variety of pathologic entities have been reported in increasing numbers. There are several reports of thymomas associated with myositis and granulomatous myocarditis.[1–3] Diffuse perivascular lymphocytic infiltrate associated with thymoma has been reported once previously.[4] There are no earlier reports of meningoencephalitis or enteritis seen with thymomas. The only recorded relationship of the thymus with the central nervous system is that of prefrontal lobotomy associated with thymic hyperplasia.[5]

This report concerns a patient who presented with a diffuse multisystem disorder. He died after a progressive downhill course in the hospital. Autopsy revealed a previously unsuspected thymoma associated with meningoencephalitis, polymyositis, diffuse perivascular lymphocytic infiltrate, and a peculiar edematous and giant cell–type enteritis. This unusual combination of findings together with a thymic tumor has not been reported previously. The possibility that this patient's diffuse peripheral lymphocytosis may be associated with an abnormality of lymphocytosis stimulating factor (LSF) is discussed.

## CASE REPORT

Patient A.S., a 42-year-old white male farmer, was admitted to Deaconess Hospital, Grand Forks, North Dakota, March 22, 1966. He was a vague historian but stated he had been well until the fall of 1965 when he noted the onset of anorexia and ease of fatigue and that he subsequently had lost 14 pounds. At about the same time the patient developed a persistent cough productive of 10 to 20 teaspoons of greenish sputum daily. He developed dyspnea on exertion which progressed to the point where he could walk less than a block at the time of admission. The patient had smoked 1 to 2 packs of cigarettes daily for twenty years but stopped smoking in October 1965 because of his cough. He had often been exposed to moldy hay while feeding cattle since the fall of 1965. There was no history of industrial dust exposure or contact with persons who had tuberculosis.

Early in January 1966 the patient developed an ulcer on the tip of his nose. Shortly thereafter he developed persistent nasal congestion and rhinorrhea. During February 1966 he became hard of hearing and this prompted his clinic visit. Ten days before admission the patient noticed the onset of ankle swelling.

Physical examination revealed a thin, chronically ill-appearing man who had a moist hacking cough. The blood pressure was 132/76 mm. Hg; pulse, 136 per minute; respirations, 20 per minute; and temperature, 99° F. A necrotic crusted ulcer was present on the tip of the nose and right naris and an ulcer was seen on the right anterior nasal septum. Nasal mucous membranes were atrophic with watery rhinorrhea. The posterior pharynx was moderately injected and a mucoid postnasal drip was present. The posteroanterior diameter of the chest was increased, and the diaphragms were low and moved poorly with respirations. There was dullness to percussion over the base of the right chest posteriorly, and coarse moist inspiratory rales and wheezes were heard throughout the lung fields. One plus pitting edema of both feet and ankles was present. Beaking, clubbing, and cyanosis of the fingernails were seen. Deep tendon reflexes were normal, and Babinski signs were plantar.

Laboratory studies revealed the hemoglobin value to be 16 gm. per 100 ml. and white blood cell count, 14,500 per cubic millimeter with a differential count of 54 polymorphonuclears, 44 lymphocytes, and 2 monocytes. The sedimentation rate was 5 mm. per hour corrected. Routine urinalysis was normal, and the VDRL serology test was nonreactive. An electrocardiogram showed sinus tachycardia. A one and one-half-hour postprandial blood sugar was 102 mg. per 100 ml.; alkaline phosphatase was 1.56 Sigma units (normal 0.8 to 2.3 Sigma units); and serum glutamic oxalacetic transaminase (SGOT) was 99 units. Serum electrolytes were normal. Total serum proteins were 4.6 gm. per 100 ml. Serum electrophoresis showed albumin to be 44.7% and globulin 55.3% with alpha 1 globulin, 9.8%, alpha 2 globulin, 17.1%; beta globulin, 15.3%; and gamma globulin, 13.1%. The bromsulphalein (BSP) test showed 14.5% retention in forty-five minutes. The following tests were negative: heterophile test, cold agglutinins test, febrile agglutinins

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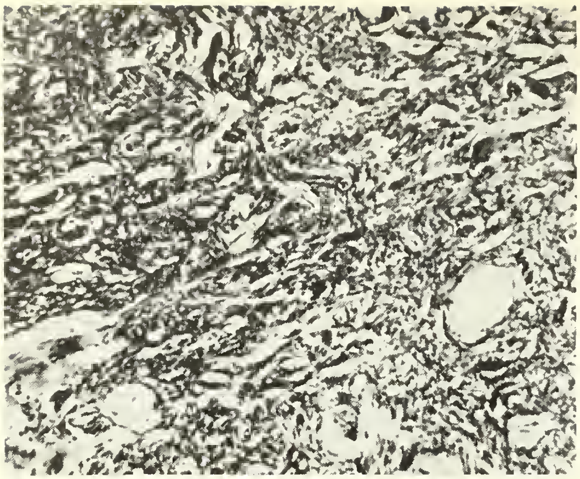


Fig. 1. Histologic appearance of the patient's thymoma

test, lupus erythematosus preparation test, skin tests for fungi, and intermediate PPD skin tests. Routine sputum culture showed no pathogenic organisms. Sputum specimens for acid-fast bacillus and fungus cultures were negative as was sputum cytology for malignant cells. Initial chest X-ray showed a uniform finely infiltrative process throughout the lung fields with more marked findings in the right lower lung.

The day following admission the patient's temperature spiked to 102.2° F. and he became dyspneic, cyanotic, and confused. He coughed up large amounts of purulent greenish sputum. Procaine penicillin, 1.2 million units intramuscularly every twelve hours, and oxygen by nasal catheter were administered. Repeat chest X-ray showed a right lower lobe pneumonia. The patient responded to therapy with gradual clearing of the pneumonia.

The patient became confused, disoriented, and agitated the day after admission and this persisted intermittently throughout his hospital course. Four days following his admission repeat neurologic examination revealed a Babinski sign on the right and unsustained clonus of the right ankle. The neck was supple. Skull X-rays were negative. A lumbar puncture was done and clear spinal fluid obtained under normal pressure. Spinal fluid studies were as follows: cell count, 31 mononuclear cells per cubic millimeter; proteins, 23 mg. per 100 ml.; glucose, 45 mg. per 100 ml.; chloride, 107 mEq. per l.; serology, nonreactive; and culture, negative. Bilateral Babinski signs were elicited on examination March 28, 1966.

Repeat white blood cell count on March 28, 1966, was 19,150 with 23 segmented neutrophils, 11 bands, 61 lymphocytes, 2 eosinophils, 1 basophil, and 1 monocyte. Stool cultures for virus were negative. Bone marrow aspiration was done which showed an increased myeloid erythroid ratio with a left shift of granulocytes and lymphocytosis. Biopsy of the nasal ulcer showed nonspecific chronic inflammatory changes.

Edema which was initially confined to the patient's lower extremities progressed to involve dependent parts of the torso and upper extremities. He again developed persistent bilateral basilar moist inspiratory rales. Tachycardia began with a rate of 120 to 130 beats per minute. The venous pressure was 8.5 cm. and decholin circulation time was 14.5 seconds. Cardiac fluoroscopy showed rapid shallow cardiac contractions with no evidence of constrictive pericarditis. Digitalization, thiomerin administration, and salt restriction were employed but did not decrease the edema.

On April 13, 1966, the patient complained of a sore mouth. Examination revealed a reddened tongue and oral mucosa with patches of thick whitish exudate present. These lesions responded to nystatin, 1 cc. orally four times daily. The white blood cell count was 11,700 with 13 segmented neutrophils, 22 stabs, 3 myelocytes, 9 metamyelocytes, 49 lymphocytes, 1 monocyte, and 3 eosinophils.

A muscle biopsy of the right upper arm was obtained. This showed a perivascular infiltrate felt to be possibly compatible with a collagen disease. The patient was started on prednisone, 80 mg. daily in divided doses. Despite this therapy his course continued progressively downhill with terminal dyspnea, cyanosis, coma, and death on April 23, 1966.

## AUTOPSY FINDINGS

Postmortem examination of the patient showed marked generalized wasting. Pitting edema of the extremities

Fig. 2. Section of the small bowel showing edema of the submucosa and dilatation of the lymphatics

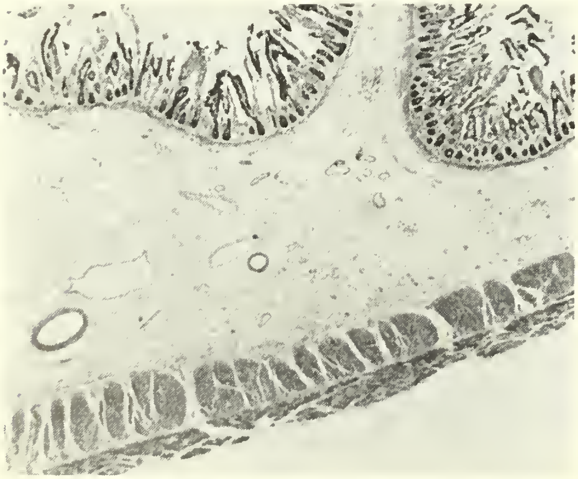
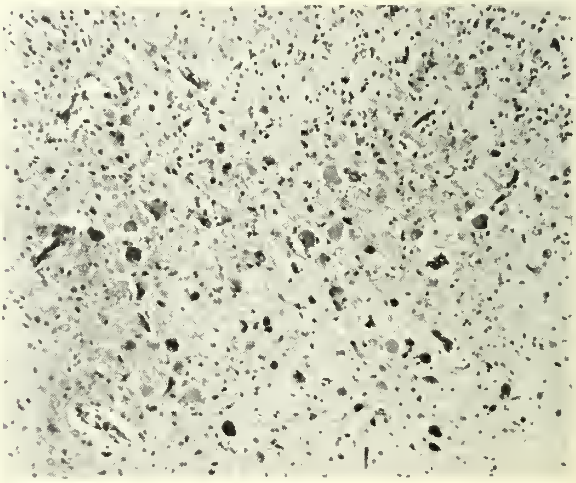


Fig. 3. Section of the brain showing degenerative changes in neurons of the cerebral cortex



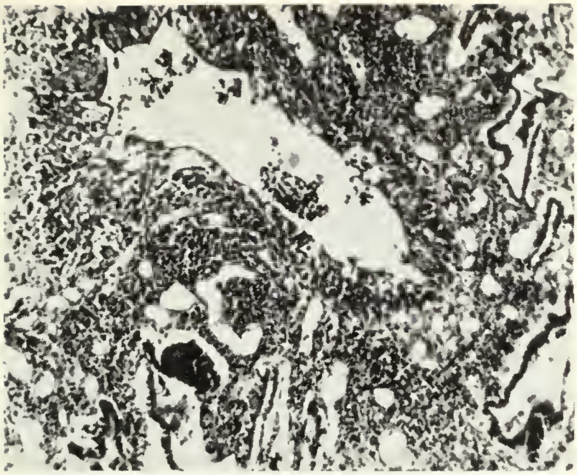


Fig. 4. Histologic appearance of lung showing extensive bronchiolar squamous metaplasia and interstitial lymphocytic infiltrate

and dependent parts of the torso was present. An ulcer was present on the tip of the nose extending to the right naris and right upper lip.

Examination of the thorax showed 500 ml. of straw-colored fluid in each of the pleural cavities. The right lung weighed 700 gm. and the left lung weighed 550 gm. The lower lobes of both lungs were deep purple and airless and exuded frothy fluid from cut surfaces.

The heart was not enlarged and the heart valves were normal. The coronary ostia were patent with no significant areas of narrowing in the main coronary vessels.

Within the anterior mediastinum a large, lobulated, encapsulated thymoma was present. This tumor weighed 70 gm. and measured 7 × 5 × 4 cm. On cut section the tumor was grayish-pink and somewhat friable with occasional grayish-white nodules.

The liver was slightly enlarged with chronic passive congestion. The small bowel wall measured up to 0.4 cm. thick. Edema was less marked in the distal part of the small bowel and absent in the large bowel. There were scattered mucosal hemorrhages in the distal jejunum and ileum. Scattered small hemorrhages were present in the skeletal muscles.

Microscopically the thymic tumor was formed by whorling bundles of spindle-shaped cells. Between these bundles were wide bands of hyalinized tissue containing small cystic areas and numerous thin-walled vascular spaces. The capsule of the tumor was infiltrated with lymphocytes. The histology was felt to be characteristic of a mixed spindle cell and lymphocytic thymoma (Fig. 1).

Sections of the jejumum showed marked edema, most prominent in the submucosa, with areas of lymphocytic infiltration, scattered histiocytes, and giant cells without granuloma formation (Fig. 2). Focal mucosal hemorrhages were present.

Sections of the brain showed foci of neuronal degeneration and glial proliferation (Fig. 3). Diffuse lymphocytic infiltration of the meninges and nerve roots was noted.

Microscopic examination of the lungs showed extensive lymphocytic infiltration of the bronchiolar walls and marked squamous metaplasia of epithelium of the bronchi (Fig. 4). Lymphocytes, histiocytes, giant cells, and foamy macrophages were present in the alveoli.

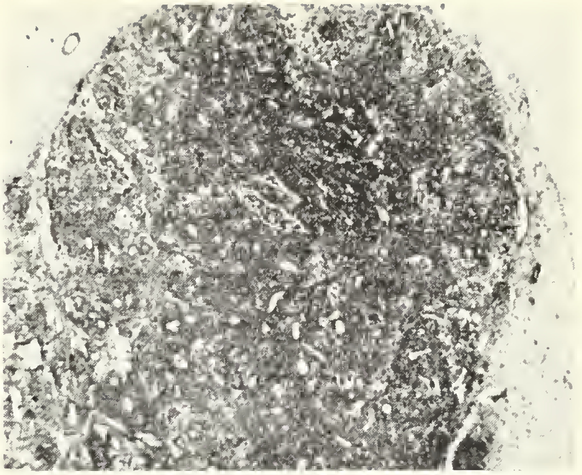


Fig. 5. Section of lymph node showing absence of germinal centers and lymphocytic infiltration of perinodal fat

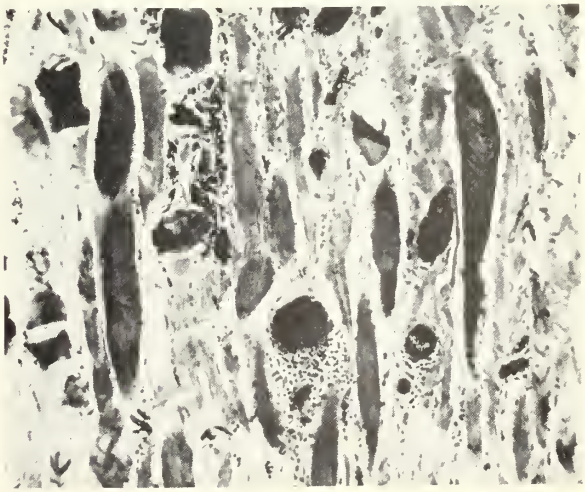
Perivascular lymphocytic infiltration of small blood vessels of the skin, testes, skeletal muscle, bowel, brain, and heart was observed. Lymph node examination showed atrophy of lymphoid tissue and absence of germinal centers and plasma cells (Fig. 5). Sections of skeletal muscle showed degeneration of skeletal muscle fibers with foci of hemorrhage and aggregates of lymphocytes (Fig. 6). There was a lymphocytic interstitial infiltrate of the testes. Absence of spermatogenesis was noted. The liver showed chronic passive congestion.

### DISCUSSION

The patient was not clinically suspected to have a thymoma during his hospital course. Although the patient's thymic tumor was of good size, it was not seen on examination of the postero-anterior or lateral chest X-rays even in retrospect.

Meningoencephalitis was felt to be present on

Fig. 6. Section of skeletal muscle showing degenerative changes of muscle fibers and lymphocytic infiltration



the basis of the patient's confusion, disorientation, positive neurologic findings, and abnormal spinal fluid examination. This was confirmed at autopsy. This is the first reported occurrence of meningoencephalitis associated with a thymoma.

The patient's giant cell and edematous enteritis was also an unexpected postmortem finding. He had no particular gastrointestinal symptoms. Although fatty metamorphosis of the liver was present on needle biopsy, this was not felt to be severe enough to account for the patient's hypoproteinemia. Several urinalyses showed no proteinuria. The peculiar enteritis, found at autopsy, suggests that the patient may have had a protein losing enteropathy to account for his hypoproteinemia.

Earlier reports of granulomatous myocarditis and myositis associated with thymoma are well documented.[1,2] This patient also had polymyositis and interstitial myocarditis.

The patient had a diffuse perivascular lymphocytic infiltrate and, in addition, lymphocytosis involving the peripheral blood, bone marrow, spinal fluid, and various body tissues. The lymph nodes themselves showed atrophy of lymphoid tissue and absence of germinal centers. Recently another patient with a thymoma was reported who had a similar perivascular lymphocytic infiltrate.[4] That patient's lymphoid tissues were depleted of follicular structures and mature small lymphocytes. He also had associated pancytopenia and hypogammaglobulinemia.

The etiology of these patients' diffuse peripheral lymphocytosis is unknown, but experimental evidence has shown the existence of a humoral lymphocytosis stimulating factor (LSF) produced by the thymus.[6–8] It has been suggested that the thymus exerts control over peripheral lymphoid tissue by means of this hormone. LSF stimulates lymphopoiesis and also confers immunologic competence to lymphocytes.[9] This factor has been found to be increased in patients with lymphoproliferative disorders.[6]

It is interesting to speculate that abnormalities of either production or feedback control of LSF may occur in certain individuals with thymic tumors leading to excessive peripheral lymphocytosis. If so, these two patients may represent human models in whom peripheral lymphocytosis resulted from abnormal production or ineffective feedback control of LSF.

### SUMMARY

A patient is presented who had a bizarre multisystem disorder with a progressive downhill course. At autopsy the patient was found to have meningoencephalitis, polymyositis, giant cell and edematous enteritis, and a diffuse perivascular infiltrate associated with a previously unsuspected thymoma. This is the first report of meningoencephalitis or giant cell and edematous enteritis associated with a thymoma. Speculation concerning the possibility of either abnormal production or feedback control of lymphocytosis stimulating factor (LSF) being responsible for the diffuse peripheral lymphocytosis in this patient is presented.

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We gratefully acknowledge W. A. Wasdahl, M.D., chairman of the department of pathology, University of North Dakota Medical School, for his helpful advice and suggestions in preparation of this manuscript.

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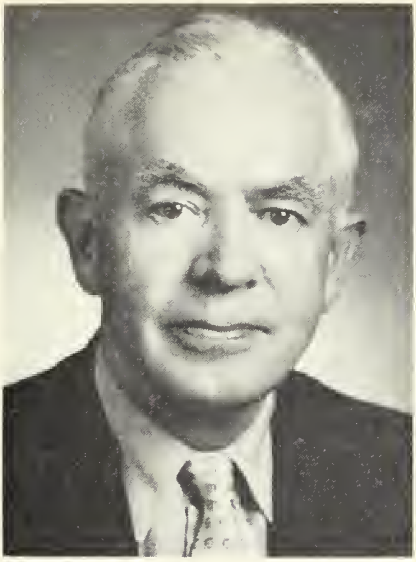

# Charles William Mayo, M.D.,

## 1898-1968:

## *As We Remember Him*

JAMES ECKMAN, PH.D., and JOSEPH BERKSON, M.D.
Rochester, Minnesota

> "We shall meet, but we shall miss him,
> There will be one vacant chair . . ."
>
> HENRY STEVENSON WASHBURN

THE MANY-SIDED MAN of the Renaissance has not vanished from the earth, but in an age preoccupied with specialized investigations into cosmology, the core of the atom, and subservience to the physical sciences, he is increasingly hard to find. If, as August Krey used to say, the practice of medicine is an art superimposed upon a conglomerate of basic sciences, one might reasonably hope to come upon a versatile man of many parts, like Jerome Cardan or Thomas Young, in medicine, for the word art properly connotes spirit and warmth as well as skill and discipline.

All these qualities, one at times obscured by others, were remarkably manifested in Charles William Mayo. Cast ineluctably in the rigid mold of one who had a famous surgeon for his father and another for his uncle, he came into life with an insistent resolution which, in the end, enabled him to stand forth as a man in and of his own attainments, distinct from the stately embellishments of his background and his forebears. As it turned out, he probably became known to more of the world than did either of the two distinguished predecessors bearing his name, since he won eminence in certain fields far removed from surgery, into which his father and uncle never would have ventured.

Born in 1898, the boy who had to dwell beneath the double-edged sword of a famous name and considerable wealth was graduated from Princeton University in 1921 with no great distinction. Indeed, as he once said, he served in the Students' Army Training Corps at Plattsburgh, N.Y., in 1918 because there was a tacit understanding that all Princeton students who did so would be given passing grades in their current courses, and he had a foreboding that, otherwise, he would not be able to master his course in mathematics. This unfeigned admission on his part was characteristic of the man: he knew what he could not do as well as he understood what he could and ought to do.

Graduated from the University of Pennsylvania School of Medicine in 1926, he returned to Rochester in 1927 to become a fellow in surgery in the Mayo Graduate School of Medicine. He received the degree of master of science in surgery from the University of Minnesota in 1931 and on July 1, 1931, was appointed head of a section of surgery in the Mayo Clinic, a post he occupied until Oct. 1, 1963, when he retired from active practice.

An amiable, gregarious, infinitely tolerant man of deep compassion balanced with a ready native wit, he had an undissembled enthusiasm for the livelier aspects of the scene about him which too often obfuscated a profound respect for the exactions of his vocation, and he early displayed a sober and diligent application to the besetting problems of his field. By no means was he a surgical dilettante; far better than many of his colleagues did he understand and seek to apply the benefices of the scientific method to the operations he planned and carried out.

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It is unlikely that anyone knowing the easygoing, extraverted, even playful "Chuck" would pick him for a scientist. But one of us (Berkson), chief of the Section of Biometry and Medical Statistics during these years, who is himself fairly demanding of scientific exactitude, has had occasion to speak of him with unreserved praise:

"He was the most scientifically critical surgeon I ever dealt with. Soon after he was appointed to the staff he began to question some surgical procedures that had long been held beyond criticism, particularly the multiple-stage operations for cancer of the large intestine. He asked to see the statistics of mortality and morbidity attending these operations. Quickly he detected flaws in the accounting of mortality. Since the first stage of these operations is the performance of colostomy, death following such a procedure was routinely 'charged' to a 'colostomy', not to the multiple-stage operation. It required special review of the histories and special knowledge to adjust this accounting, so, at his direction and under his supervision, such reviews were made.

"Statistics of morbidity were not available in sufficient detail, and so he set up special investigations to procure them. Regularly he came in to see how the statistics were shaping up and he guided himself with total objectivity by the results. These critical assays of established practice were not always met with enthusiastic welcome. Surgeons long and expertly practiced in the standard procedures sometimes expressed their unstinted annoyance at the questing attitude of this, for them, brash newcomer on the staff. But he was as persevering in his inquiries as he was understanding of their criticism. One after another of his colleagues became convinced, and the one-stage procedure gradually replaced the multiple-stage operation. It was not only his willingness to question the accepted that reflected the scientist in him; it was his objectivity in viewing the evidence.

"His curiosity to explore the untried expressed itself also in his encouragement of the investigative efforts of others. He was ever willing to take the risk of supporting what might not show immediate results, if it appealed to his imagination. The late Dr. Randy Lovelace, were he living, would tell an impressive story of the effective encouragement of his early pioneering work with Dr. Walter Boothby which resulted in prize-winning achievements in the field of aero-medicine.

"His early experience in learning the importance of statistics made a deep impression on him, and he never failed, in showing an important visitor around the Mayo Clinic, to visit the Section of Biometry and Medical Statistics and lecture the visitor on its important function. In his passing, not only medicine and public service lost an effective friend, but also science."

After 1939, when both his father and his uncle died, the depth and the dimensions of his interests expanded vastly. In World War II he was an Army medical officer in New Guinea and the Western Pacific, participating in a protracted campaign which subjected him to a rough and often tedious and hazardous existence amidst strange and primitive peoples. When President Eisenhower in 1953 asked him to carry out a special mission for the nation as alternate delegate to the Eighth General Assembly of the United Nations he accepted it.

It is a reflection of his lack of subservience to orthodox opinion and of his courage that he undertook the responsibility against the advice of his elders, who thought this kind of activity lay outside the proper sphere of a physician, and perhaps beyond his abilities. He served creditably and when, during the Korean War, the United States was accused of engaging in bacteriological warfare, he refuted the charges in a famous denunciation, listened to around the world, that had the massive eloquence of a John Bunyan arraigned against the concerted forces of evil.

He was a member of the Board of Regents of the University of Minnesota from 1951 until his death on July 28, 1968, and was chairman of the board from 1961 to 1967, a critical period in which the demands upon the university became enormous in dimension and complexity. Scores of other public services which he rendered without either demur or ostentation are scarcely known to the mass of people who were the chief beneficiaries of them.

He was immune to flattery or blandishment, although not everyone realized this. When some obvious attempt at empty compliment was made, it might be received with a stare as coolly obsidian as that of the legendary basilisk, or Dr. Mayo might choose to pile Pelion upon Ossa by retorting with some even more outrageous sally in praise of himself. The victim could take scant cheer from either course.

Some regarded the great domain of Mayowood, where he lived, as an other-world abode of gaiety and antic diversion. In many ways it was, and admirably so, but never enough to distract him from an old Roman's sense of his responsibilities to his patient. Often, late at night, he would leave the repose of Mayowood to drive back to the hospital because, beneath a supernatant moment of pleasure, he had suddenly remembered something he could do to enhance the comfort or well-being of a patient who was always a fellow human being and not simply another "case." Many a patient retraced the somber steps back to consciousness to behold Dr. Mayo sitting at his bedside in a hospital room in sympathetic vigilance against possible untoward events and ready with a cheery word of encouragement.

In the operating room his urbane tranquility was at once the delight and despair of his assistants. In the midst of a complicated and tedious procedure in the abdomen he was known to cock an amiable eye at his weary assistant and murmur, "Gettin' tired, Doc?" He was vastly pleased one long afternoon when, as he often did, he allowed his assistant to conduct the operation with himself as assistant, and the young tyro at length glanced at him and said, "Gettin' tired, Doc?"

A photograph of Chuck Mayo at the age of about 12 years shows him gamboling with his dog, Queen, with an expression of pure delight on his face. Actually, an unmistakable attraction to animals and the rural scene was evident in Dr. Charles H. Mayo, his two sons, Charles William and Joseph Graham, and the sons of the latter two. In the end this was truly fatal to Dr. Charles William Mayo. On the morning of July 28, his birthday, he arose and went for a drive about Mayowood, as was his custom on Sundays. Proceeding along a narrow country lane of loose gravel and soft-earth shoulders, he seems to have slowed his heavy Mercedes-Benz limousine to 5 or 10 miles an hour while he glanced back over his shoulder at a newborn colt capering in a nearby meadow. When one wheel left the crumbling shoulder the automobile toppled into a deep ditch, probably throwing Dr. Mayo half out of the car through the open sun louver in the roof and crushing his chest as the weighty machine rolled over him. We can be sure it would have delighted him, could he have known it, that his little dog, riding with him on the seat, was entirely unhurt.

Thus died one whose abiding tenet throughout his career was admirably apotheosized by Emily Dickinson in her quatrain:

> "Surgeons must be very careful
> When they take the knife!
> Underneath their fine incisions
> Stirs the Culprit—*Life!*"

# Valedictory

This, the final issue of *The Journal-Lancet,* signals the end of an era in medical journalism in the Upper Midwest. It marks the completion of ninety-nine years of progress and achievement, of fulfillments and satisfactions for *The Journal-Lancet.*

Members of the Board of Editors were always concerned with more than publication of a journal. They were men of vision, dedication, and energy. They formed the nucleus for an outstanding editorial organization that developed journals of professional distinction and international reputation: *Modern Medicine, Geriatrics,* and *Neurology.*

In the early years *The Journal-Lancet* was the only medical journal in this region. At various times during the ninety-nine years it has been the official journal for the medical societies in Minnesota, North Dakota, South Dakota, and Montana. It has provided the prototype for the state association journals that inevitably were begun as the state associations grew in stature and membership.

Just as a family grows up and the day comes when the children leave the parental roof and strike out on their own, so did the state associations depart from *The Journal-Lancet* fold. The first to establish its own journal was *Minnesota Medicine.* As time went on, others followed suit.

The North Dakota State Medical Association, whose affiliation with *The Journal-Lancet* has been unbroken for nearly sixty years, was the last state association still with *The Journal-Lancet.* Recently there has been a feeling within that association that the time had come when North Dakota, too, should have a journal of its own.

It is with mixed feelings that the editors have seen each of the associations depart. It is saddening, of course, to realize that one is no longer needed. But we cannot help but feel a sense of pride that each of these groups which we have served to the best of our ability has come to maturity and independence. Our job is done. We pass on the torch.

# The Journal-Lancet

SERVES THE MEDICAL PROFESSION OF THE UPPER MIDWEST

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  Lund: Peridural Analgesia and Anesthesia 29 (Jan.)
  McNair (ed.): Hamilton Bailey's Emergency Surgery 13A (Sept.)
  Millichap: Febrile Convulsions 13A (Dec.)
  Myers: Masters of Medicine 13A (Dec.)
  Roen: Atlas of Urologic Surgery 13A (Nov.)
  Rutstein: The Coming Revolution in Medicine 8A (July)
  Sinclair: An Introduction to Functional Anatomy 6A (June)
  Smith: Pathological Physiology for the Anesthesiologist 29 (Jan.)
  Stern (ed.): The Growth of Medicine 12A (Sept.)
  Stevens: The Ecology and Etiology of Human Disease 28 (Jan.)
  Taylor: The Principles of Medical Computing 15A (Nov.)

  - Teplick et al.: Roentgenologic Diagnosis: A Complement in Radiology to the Beeson and McDermott Textbook of Medicine, Volumes I and II 8A (July)
  - Van Manen: Stereotactic Methods and Their Applications in Disorders of the Motor System 34 (Jan.)
  - Wang: Clinical Radioisotope Scanning 11A (Dec.)
  - Weber (ed.): Advances in Enzyme Regulation: Volume 5: Proceeding and Synthesis in Normal and Neoplastic Tissues held at Indiana University School of Medicine, Indianapolis, Indiana, October 3 and 4, 1966 12A (Sept.)
  - Wolstenholme & O'Connor (eds.): Antilymphocytic Serum: Ciba Foundation Study Group 29 228 (Aug.)
  - Wolstenholme & Porter (eds.): The Human Adrenal Cortex: Its Function Throughout Life: Ciba Foundation Study Group No. 27 10A (Oct.)
  - Young & Barger: Learning Medical Terminology Step by Step 14A (Nov.)
  - Zimmerman & Anson: Anatomy and Surgery of Hernia 11A (Nov.)

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  - patients' reaction to communal dining room (case reports, Gauvin et al.) 136 (June)
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# *Book Reviews . . .*

### Wound Healing: A Symposium Based upon The Lister Centenary Scientific Meeting Held in Glasgow, Sept., 1965

*edited by* SIR CHARLES ILLINGWORTH, M.D., *289 pp., ill., Little, Brown & Co., Boston, 1966. $13.50*

One hundred years ago Lord Lister proved that wound infections were due to bacterial invasion, which was preventable. To celebrate this event, "Wound Healing," a symposium based upon the Lister Centenary Scientific Meeting, was held in Glasgow in 1965. The 4 sessions included the general topics: [1] local response to injury, [2] wound infections, [3] constitutional response to injury, and [4] wound healing. Participants and contributors included some of the leading scientists of the world. The professors from England were Abercrombie, Barber, Douglas, Garrod, Sir Ashley Miles, and Spector; from Germany, Linder; from Amsterdam, Borema; and from the U.S.A., Hunt. Lord Florey, Englebert Dunphy, and F. D. Moore were the chairmen who evaluated the papers, commented upon them, and added their own experiences and thoughts.

It is not within the scope of this review to mention all the topics covered. However, a few should be named to awaken the interest of prospective readers. Subjects were discussed and experiments done in inflammation, effects of microbacteria on granulation formation, cell replacement after tissue damage, prevention of wound infection and drug resistance, hyperbaric oxygen and aerobic microorganisms, growth and injury and response to injury, tensile strength in healing wounds, and healing of incised wounds.

All the papers have basic physiologic concepts of wound healing. The paper on hyperbaric oxygen and its effect on microorganisms was of particular provocative interest. The effects of cortisone therapy on wound healing and tensile strength was demonstrated expertly. The illustrations and graphs are well done and self-explanatory.

We recommend this book highly to the student, be he in medical school, internship, residency, or in the active practice of medicine. We recommend this book especially to the surgeon, whether he is a neophyte or master, and most of all to the older surgeon.

JACK I. SCHNECK, M.D., F.A.C.S.
*Minneapolis*

### Clinical Radioisotope Scanning

*by* YEN WANG, M.D., *245 pp., ill., Charles C Thomas Co., Springfield, Ill., 1967. $12.50*

This book is not a basic primer in radioisotopes, although some basic material is presented. Neither is it primarily a technique manual, although techniques are discussed. The greatest usefulness of the book is its very excellent presentation of the interpretation of scans and the associated pitfalls of interpretation.

The author assumes that the reader has a fairly extensive knowledge of radioisotopes and instrumentation and, therefore, is able to get to the meat of his subject

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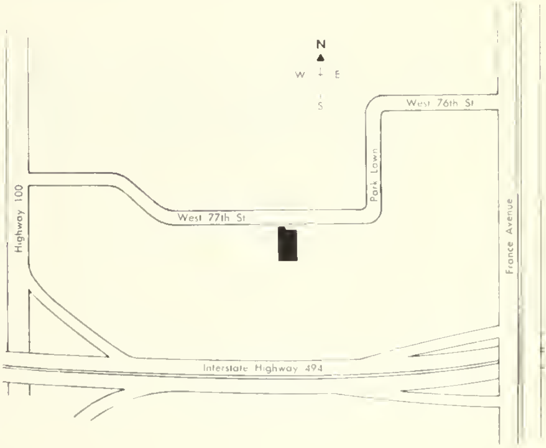

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without much preamble. For this reason he is able to pack a surprising amount of useful information in a rather small volume.

The initial chapter of the book is a brief discussion of radiopharmaceuticals. The author acknowledges that the rapid changes in this field make a complete discussion beyond the scope of this book. The second chapter is on instrumentation and includes a good section on collimators. The remainder of the book is divided into twelve chapters, each dealing with a separate procedure in isotope scanning. Each chapter includes comments on technique and a profusely illustrated discussion of interpretation with many references to literature.

The overall impression of this book is that it is a concise and readable source of information on scanning which will find its greatest usefulness in the hands of one actively engaged in the production and interpretation of radioisotope scans.

CHARLES W. FRYE, M.D.
*St. Paul*

## Cardiac Radiology

*by* EDWARD F. DUNNE, M.B., *256 pp., ill., Lea & Febiger, Philadelphia, 1967. $12.50*

The author correlates his plain film and fluoroscopic findings in 2,000 cases with the findings at cardiac catheterization, angiography, and surgery. The purpose of the book is not to replace the standard texts on angiography but to supplement them with much previously unpublished information on what can be obtained from meticulous fluoroscopy and plain film study. The book fills this purpose very well.

The discussion is limited to the most common congenital defects and acquired valvular disease. Arteriosclerotic and hypertensive disease are not covered. This reviewer does not necessarily agree that stressing the simpler methods would reduce the need for angiography and for catheterization as the author suggests, but in the reviewer's experience, better selection of patients for the special procedures can certainly be made by meticulous plain film and fluoroscopic study.

The illustrations throughout are excellent and the book is well arranged. The volume is not designed for the general practitioner but should be in the library of everyone doing cardiac evaluations and interpretations.

R. M. BERG, M.D.
*Bismarck, North Dakota*

## History of University of Minnesota Medical College is Published

A 940-page history of the University of Minnesota's College of Medical Sciences has been published—the culmination of six years' research and writing by its author, Dr. Jay Arthur Myers, professor emeritus of internal medicine and public health, and chairman of THE JOURNAL-LANCET board of editors.

Publication of "Masters of Medicine, An Historical Sketch of the College of Medical Sciences, University of Minnesota, 1888-1966"—which includes some 245 pictures—was made possible by a $20,000 gift from Dr. Frank McKinney to the Minnesota Medical Foundation. Dr. McKinney, a Minneapolis surgeon, practiced with Dr. Myers, a 1920 graduate of the University's Medical School.

A reception for Dr. Myers and for the publisher, Warren H. Green of St. Louis, Mo., was held from 4 to 6 P.M., Wednesday, Nov. 6, in the Campus Club of Coffman Memorial Union.

### Febrile Convulsions

*by* J. GORDON MILLICHAP, M.D., *222 pp., ill., The Macmillan Company, New York, 1968. $7.95*

The subject, which has been largely ignored in this country, is completely and thoroughly reviewed. The author critically analyzes the world literature on this subject and also includes his own well-documented studies to complement the review. Many tables and graphs are included. These are carefully interpreted, and at times this is sufficient so that inclusion of the tables is superfluous. The summaries at the end of each chapter succinctly concentrate the significant features of that chapter. Dr. Millichap points out, and substantiates, that the height of the fever is more significant than the rate of the rise of the fever. Prognostic factors are thoroughly discussed. Treatment of febrile convulsions is clearly and simply presented, and those factors which suggest use of continuous anticonvulsant therapy are discussed, but it seems that Dr. Millichap may be somewhat conservative in this matter.

The book is very worthwhile for the pediatrician, general practitioner, neurologist, and neurosurgeon because of the frequency of this problem. All of these will have contact with this frequent problem, and counseling of parents and appropriate conservative scientific therapy will be readily available from the data included in this book.

HAROLD BERRIS, M.D.
*Minneapolis*

## NEW BOOKS RECEIVED

**Rheology of Circulation**
by R. L. WHITMORE, Ph.D., 196 pp., ill., Pergamon Press, New York, 1968. $9

**Lung Transplantation**
by MAX J. TRUMMER, M.D., and PAUL BERG, V.M.D., 122 pp., ill., Charles C Thomas, Springfield, Ill., 1968. $8.50

**The Pediatric Patient 1968**
edited by SARAH R. GUSTAFSON, Ph.D., and DAVID BAIRD COURSIN, M.D., 317 pp., ill., J. B. Lippincott Co., Philadelphia, 1968. $8

**Synopsis of Surgery**
by RICHARD D. LIECHTY, M.D., and ROBERT T. SOPER, M.D., 1,091 pp., ill., C. V. Mosby Co., St. Louis, 1968. $12.50

**Atlas of Precautionary Measures in General Surgery**
by IVAN D. BARONOFSKY, M.D., 281 pp., ill., C. V. Mosby Co., St. Louis, 1968. $23.50

**A Manual of Electroneuromyography**
by HYMAN L. COHEN, M.D., and JOEL BRUMLIK, M.D., 178 pp., ill., Hoeber Medical Division, Harper & Row, Publishers, New York, 1968. $10.50

**Selected Papers on Direct Psychoanalysis: Volume 2**
by JOHN N. ROSEN, M.D., 172 pp., Grune & Stratton, New York, 1968. $6.50

**Braces: A Primer for Nurses: Rehabilitation Publication Number 719**
by PATRICIA TOOHEY FLAHERTY, R.N., 25 pp., ill., American Rehabilitation Foundation, Minneapolis, 1968. $.85

**Hematologic Reviews**
edited by JULIAN L. AMBRUS, Vol. 1, 286 pp., ill., Marcel Dekker, Inc., New York, 1968. $16.75

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